



U.S. Department
of Transportation
**Federal Aviation
Administration**



SDR

Summary

Service Difficulty Reporting

February 8, 1998 - February 14, 1998

GENERAL AVIATION, ZAC-327

You can improve Air Safety by reporting the problem when you see it!

SECTION

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- II Domestic Service Difficulty Report
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ISSUE: 98-07



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SDR SUMMARY

General Aviation, ZAC-327



This summary includes domestic (United States) Service Difficulty Reports (SDRs) entered into the data base for aircraft weighing 12,500 lbs. and below. It also includes reports on aeronautical products (engines, propellers, and components), and all helicopters. A separate section for International SDRs for aircraft weighing 12,500 lbs. and under has also been included. Under a data exchange agreement, International SDRs are submitted to the FAA by the Civil Aviation Authority of other countries (currently, Canada - CAN, and Australia - AUS). All reports are sorted by aircraft make, model group (basic model), and Joint Aircraft System/Component (JASC) code. Within each aircraft model group, the specific model shown may vary, but similar types of reports will be grouped together and listed in ascending order by their JASC code. Each field contains all information submitted to the FAA. Some fields are not included in order to make the summary easier to read. Additional information may be obtained by referring to the "operator control number." Send your request to the Aviation Data Systems Branch, AFS-620 at the address or phone below.

The Regulatory Support Division (AFS-600) has established a "HomePage" on the Internet through which the same information is available. There is a large quantity of other information available through the AFS-600 HomePage such as the most current SDR system codes (i.e., Joint Aircraft System/Component Codes). The SDR Question and Answer Section of the Summary will also be transferred to the AFS-600 HomePage to simplify the process of preparing the SDR Summaries in the PDF format each week. There are "hot buttons" to take you to other locations and sites where FAA Flight Standards Service Information is available. The AFS-600 "HomePage" address is:

<http://www.mmac.jccbi.gov/afs/afs600>

"The Service Difficulty Reports in this publication are derived from unverified information submitted by the aviation community without FAA verification for accuracy. The number of SDRs submitted is not an indication of the mechanical reliability or fitness of an airline or individual operator, and the information should not be used as such."

Comments are welcomed and may be directed to:

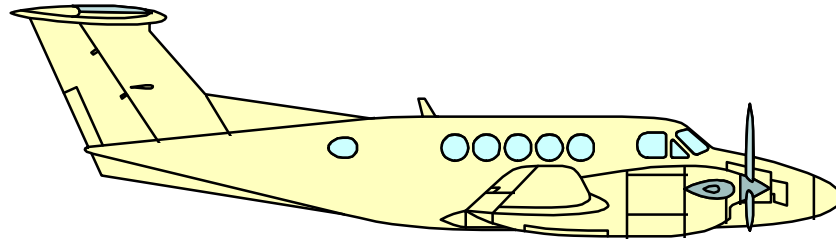
*Federal Aviation Administration
Aviation Data Systems Branch, AFS-620
P.O. Box 25082
Oklahoma City, OK 73125-5029
Phone: (405) 954-4171, Fax: (405) 954-4748*

Your continued participation is essential and is an integral part of ensuring aviation safety. Thank you for supporting the Service Difficulty Program! If you have any questions regarding this special notice you can contact John Jackson at (405) 954-6486, or Jim Gillespie at (405) 954-1141, or Blake McDonald at (405) 954-0307 in the Aviation Systems Branch (AFS-620). Their E-mail addresses are:

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SIGNIFICANT OCCURRENCE REPORT





U.S. Department
of Transportation
**Federal Aviation
Administration**

THE SIGNIFICANT OCCURRENCE REPORT



The Significant Occurrence Report is a compilation all of the star bordered reports that appear in the General Aviation Service Difficulty Report (SDR) Summary, ZAC-327. The Significant Occurrence Report is used to highlight industry problem areas to field inspectors and the aviation public.

Limited analysis is performed by the Aviation Data Systems Branch, AFS-620 during the preparation of the "Significant Occurrence Report", which is generated each week and is included in the front of the Air Carrier SDR Summary. Significant Reports are hand selected by AFS-620's inspectors based on the individual merit of each report. The criteria for selection includes, but is not limited to, items that indicate high failure rates; items related to accidents or incidents; or design or maintenance failures which may affect the safe operation of the aircraft.

In some cases, this limited analysis of SDR data leads to the preparation of information bulletins which are routed to the appropriate product certification office for further investigation of the problem. The end result may be the issuance of an airworthiness directive (AD) by the Aircraft Certification Service (AIR) if warranted.

The Significant Occurrence Report (section I) of the weekly SDR Summary is not intended to be a summary of all significant events and should not be used as such. We recommend that you review further the applicable sections of the SDR summary that may be of interest.

GENERAL AVIATION SIGNIFICANT OCCURRENCE REPORT

2/8/98 - 2/14/98 ISSUE: 98-07 ZAC-327

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
5310	120VT 0222	AMTR MINI500				FRAME	CRACKED M/R GEARBOX	1/22/98	98ZZX502
*****	MOST ALL MINI-500 AIRFRAMES HAVE CRACKED NEAR THE MAIN ROTOR GEARBOX MOUNT BOLT HOLES. ALL ARE LOW TIME ANYWHERE FROM 6 HOURS AND UP. AIR FRAME TUBE STRUCTURE MAY BE OF TOO THIN MATERIAL. SUBMITTER BELIEVES CRACKS FORM BECAUSE OF THE INABILITY TO TRACK AND BALANCE ROTOR BECAUSE OF A FLAW IN THE MAIN ROTOR MAST. THE INSIDE OF MAST IS NOT CONCENTRIC WITH THE OUTSIDE. THE LOWER SWASHPLATE ATTACHES TO THE INSIDE OF SHAFT AND NOW HAS A SEVERE WOBBLE SINCE IT IS NOT CONCENTRIC. THIS AIRCRAFT, SN 0222, CONTINUES TO CRACK EVEN AFTER APPROVED REPAIRS.								
6230	120VT 0222	AMTR MINI500				SHAFT	MISMANUFACTURED M/R	1/22/98	98ZZX501
*****	BECAUSE OF MANY PROBLEMS WITH VIBRATIONS CRACKING FRAME, FOUND THE MAIN ROTOR SHAFT HAS AN INTERNAL FLAW. IT WAS MANUFACTURED NOT BEING TRUE INSIDE. THE INSIDE OF ROTOR MAST IS NOT CONCENTRIC WITH OUTSIDE. THE MAIN CONTROL ASSEMBLY (SWASHPLATE) BOLTS TO THE INSIDE OF THIS SHAFT AND NOW HAS A SEVERE WOBBLE BECAUSE OF IT. SUBMITTER STATED THE PARTS ARE MANUFACTURED WITH THIS DEFECT AND THEY STILL CONTINUE TO SELL THSE DEFECTIVE PARTS.								
8520	120VT 0222	AMTR MINI500	ROTAX ROTAX582			ENGINE	SEIZED CRANKSHAFT	1/16/98	98ZZX486
*****	ENGINE SEIZED IN-FLIGHT. SERVICE CENTER THAT REPAIRED ENGINE SAID COUNTERWEIGHT CAME OFF REAR OF CRANKSHAFT. SERVICE CENTER ALSO SAID THEY BELIEVE THAT COUNTWEIGHT CAME OFF DUE TO THE WAY REVOLUTION INSTALLS BEARING ON END OF CLUTCH. IT IS HELD STATIONARY WHICH DOES NOT ALLOW END OF CRANKSHAFT TO WOBBLE WHEN IT IS NOT EXACTLY TURNING TRUE. SUBMITTER HAD TO DO AUTOROTATION, NO DAMAGE.								
5712	5ST BB289	BEECH 200BEECH				RIB	CRACKED WS 46,65,85	7206	12/6/97 98ZZX626
*****	RIBS ON THE LEFT WING, ONE STRINGER AFT OF THE LEADING EDGE AT WS 56.50, WS 65.50, AND WS 85.00 ARE CRACKED WHERE THE STRINGER AND RIB ATTACH. THE CRACKS GO FROM THE RIVET HOLE FORWARD TO THE LEADING EDGE OF RIB SECTION. SUSPECT CRACKS ARE DUE TO THE FLEXING OF THE WING OVER TIME. REPAIRED BY INSTALLATION OF A DOUBLER.								
5741 UJJR	2MIL BC15	BEECH A200				BOLT KIT 10140261S	WRONG PARTS WING ATTACH	1/20/98	98ZZX530
*****	THE BOLT KIT LISTED IS FOR THE UPPER AND LOWER AFT WING ATTACH FITTINGS FOR A BEECH SERIES 200. UPON RECEIVING 4 OF THESE KITS, NOTICED THE WASHERS INCLUDED IN THE KIT DID NOT HAVE A SMOOTH CONTINUOUS OUTER RADIUS WHICH IS NOTED IN BEECH 200 SRM CH 57-17-01 PAGE 212, FIG 207. SMOOTH OUTER RADIUS IS TO GO AGAINST 'BATHTUB' FITTING SO AS NOT TO SET UP STRESS. COULD NOT USE THESE WASHERS AND HAD TO ORDER MORE. SUBMITTER SUGGESTED BETTER QC ON RAYTHEONS PART COULD PREVENT DELAYS SUCH AS THIS.								
3340	24017 MC478	BEECH C24R				LIGHTS	NOT GROUNDED WING BONDING	1/13/98	98ZZX638
*****	TT: 2,065.43 HOURS. THE PILOT REPORTED THAT TURNING ON THE LANDING LIGHTS, NAV LIGHTS, OR PITOT HEAT CAUSED BOTH FUEL GAUGES TO PEG ON FULL. INVESTIGATION DETERMINED THE WING ASSEMBLIES WERE NOT WELL GROUNDED TO THE FUSELAGE. GROUND WIRES WERE ADDED BETWEEN BOTH MAIN WING SPARS AND THE FUSELAGE STRUCTURE TO CORRECT THE PROBLEM. SUBMITTER RECOMMENDED FUEL GAUGES BE WATCHED FOR DEFLECTION WHEN ELECTRICAL EQUIPMENT IS TURNED ON.								
7160	2012C TD430	BEECH B95			9591911419	BUSHING 9591911295	WORN RT CARB AIR BOX	8269	12/24/97 98ZZX519
*****	THE RIVETS ATTACHING THE WELD ASSY BUSHING PN 95-91912-95 TO THE RT ENGINE CARBURETOR AIR BOX ASSY PN 95-919114-19 WORKED LOOSE CAUSING THE BUTTERFLY IN THE CARBURETOR HEAT BOX TO BECOME LODGED IN THE CARBURETOR HEAT ON POSITION RESULTING IN A FUEL RICH CONDITION FOR THE ENGINE. WHEN THE CARBURETOR HEAT CONTROL WOULD NOT PUSH IN TO TURN HEAT OFF (BECAUSE OF STUCK BUTTERFLY), THE PILOT OPTED TO SHUT DOWN THE ENGINE.								
7320 KCQA	499CZ U81	BEECH 99A	PWA PT6A27			ROD END 3008787	DEFECTIVE CAM BOX TO FCU	1/13/98	98ZZX534
*****	ENGINE POWER WOULD NOT DECREASE DUE TO TIGHT ROD END CONNECTOR FROM CAM BOX TO FCU DEFECTIVE. TAT: 30,824 HOURS. ENGINE TSN: 4,295 HOURS. ENGINE TSO: 1,129 HOURS.								

***** DENOTES SIGNIFICANT OCCURRENCE

GENERAL AVIATION SIGNIFICANT OCCURRENCE REPORT (cont'd)

2/8/98 To 2/14/98 ISSUE: 98-07 ZAC-327

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
7310 RMXA	8765J S7054	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 43013761	LEAKS ENGINE FUEL		1/1/98 98ZZZX568
*****	SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.								
5553	51400 150699981	CESSNA 150J				FITTING 04311481	CRACKED VERTICAL STAB		12/19/97 98ZZZX557
*****	INSPECTION FOUND VERTICAL STABILIZER ATTACH FITTING CRACKED.								
7603	704AC 15078450	CESSNA 150M				CABLE S122217	FAILED THROTTLE	2306	1/24/98 98ZZZX514
*****	THROTTLE CABLE PLASTIC OUTER COVER MADE OF PLASTIC BECAME BRITTLE FROM AGE AND HEAT AND FAILED. THE WHOLE ASSEMBLY WAS MOVING WITH POWER CHANGES. SUBMITTER STATED THESE ORIGINAL CESSNA SUPPLIED CABLES ARE ALL REACHING THEIR SERVICE LIFE ON PLASTIC DETERIORATION. SUBMITTER HAS NOTICED THIS ON MODEL 172 AND MODEL 150 AIRCRAFT.								
3221 VH3R	7285Q 18260256	CESSNA 182P				FITTING 07436062	CRACKED NLG ATTACH		1/19/98 98ZZZX529
*****	FOUND THE LOWER NOSE GEAR FITTING CRACKED AT THE COLLAR. NOSE GEAR COLLAR WAS SEPARATED FROM THE ATTACH FITTING. ONLY THE UPPER ATTACH FITTING WAS HOLDING THE NOSE GEAR TO THE AIRFRAME. AFTER THE LOWER ATTACH FITTING WAS REMOVED, A CRACK WAS FOUND HALF-WAY ACROSS THE LT REAR ATTACHMENT EAR. CAUSE OF DEFECT UNKNOWN.								
3222	323DC P21000365	CESSNA P210N				TORQUE LINK 12434262	FAILED NLG	3615	1/15/98 98ZZZX546
*****	WHILE TAXIING BACK AFTER LANDING ON GRASS STRIP, NOSE WHEEL GAVE SLIGHT SHIMMY AND AIRCRAFT VEERED TO A STOP. UPPER TORQUE LINK WAS BROKEN IN HALF MIDWAY BETWEEN BOLT HOLES. NO SIGNS OF PRIOR CRACKING.								
2720	98904 310R1240	CESSNA 310R				RUDDER PEDAL 086170040	FAILED PILOT LT		1/23/98 98ZZZX512
*****	AFTER STARTING ENGINES TO REPOSITION AIRCRAFT, PILOT PUSHED ON LEFT RUDDER PEDAL AND PEDAL BROKE OFF AT BASE WHERE IT IS WELDED TO PEDAL ARM ASSY. AIRCRAFT TOTAL TIME 5,980 HOURS. PART MAY HAVE BEEN ORIGINAL. ANNUAL INSPECTION, 6 MONTHS PRIOR. HAVE HEARD OF SAME PROBLEM WITH SIMILAR AIRCRAFT. SUBMITTER SUGGESTED MORE FREQUENT AND CLOSER INSPECTIONS.								
2721	6335X 340A0504	CESSNA 340A				TURNBUCKLE MS21251B25	SPLIT RUD TRIM CABLE	3086	1/26/98 98ZZZX645
*****	DURING ADJUSTMENT OF RUDDER TRIM CABLES, ONE TURNBUCKLE WAS FOUND SPLIT DOWN THE SIDES. THE CABLE ENDS WERE NOT BOTTOMED OUT. POSSIBLE DEFECT CAUSED FROM OVERTIGHTENING CABLE AT SOME TIME. SUBMITTER RECOMMENDED CLOSE INSPECTION OF TURNBUCKLES AT REGULAR INSPECTIONS.								
2460	6387X 402B1350	CESSNA 402B				TERMINAL BOARD TB2	SHORTED WS 27.125	4430	12/10/97 98ZZZX637
*****	DURING ROUTINE MAINTENANCE, CHANGING RIGHT COWL FLAP CABLE, THE HEATER'S FUEL LINE CONTACTED THE NON-INSULATED TERMINAL BOARD'S STUD AT RIGHT WING STA 27.125. PLACING MASTER SWITCH IN ON POSITION PROVIDED A SHORT CIRCUIT AND FIRE. THE TERMINAL BOARD'S STUDS NEED TO BE INSULATED FROM FUEL AND OIL LINES IN IMMEDIATE AREA.								
7160 N81R	581EW 3246070	PIPER PA32R301			FACET	FILTER 638873	DETERIORATED INDUCT AIR	212	1/27/98 98ZZZX644
*****	THE FAA-PMA FACET INDUCTION AIR FILTER WAS FOUND DURING AN INSPECTION WITH THE BLACK RUBBER INTERIOR EDGE DETERIORATING. THE FILTER HAD 212.1 HRS SINCE THE AIRCRAFT WAS NEW AND 10 MONTHS SINCE AIRCRAFT WAS ISSUED ITS ORIGINAL AIRWORTHINESS. THE DETERIORATION IS ON THE INBOARD SIDE OF FILTER WHERE IT CAN BE INJECTED BY ENGINE.								

(End of GENERAL AVIATION SIGNIFICANT OCCURRENCE REPORT)

***** DENOTES SIGNIFICANT OCCURRENCE

Run Date: 19-Feb-98

FEDERAL AVIATION ADMINISTRATION SIGNIFICANT OCCURRENCE REPORT INDEX

Showing Specific Part Numbers and Aircraft Model by Year

FOR THE PERIOD OF: 2/8/98 To 2/14/98

<u>PART NUMBER</u>		<u>TOTAL</u>	<u>YEAR</u>											
<u>PART NAME</u>	<u>ACFT MODEL</u>		<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>
04311481														
ATTACH BRACKET	150L	1	-	-	-	-	-	-	-	1	-	-	-	-
FITTING	150J	1	-	-	-	-	-	-	-	-	-	-	-	1
	152	1	-	-	-	-	-	-	-	-	-	-	1	-
TOTAL of # 04311481 -----		3	-	-	-	-	-	-	-	1	-	-	1	1
07436062														
BRACKET	182P	1	-	-	-	1	-	-	-	-	-	-	-	-
FITTING	182P	1	-	-	-	-	-	-	-	-	-	-	-	1
	182Q	1	-	-	-	-	-	-	-	-	-	-	1	-
	182Q	1	-	-	-	-	-	-	-	1	-	-	-	-
	182R	1	-	-	-	-	-	-	1	-	-	-	-	-
FORGING	182P	1	-	-	-	-	-	-	-	-	-	1	-	-
TOTAL of # 07436062 -----		6	-	-	-	1	-	-	1	1	-	1	1	1
086170040														
RUDDER PEDAL	310R	1	-	-	-	-	-	-	-	-	-	-	-	1
TOTAL of # 086170040 -----		1	-	-	-	-	-	-	-	-	-	-	-	1
10140261S														
BOLT KIT	A200	1	-	-	-	-	-	-	-	-	-	-	-	1
TOTAL of # 10140261S -----		1	-	-	-	-	-	-	-	-	-	-	-	1
111TW6003														
SWITCH	35A	1	-	-	-	-	-	-	-	-	-	-	-	1
TOTAL of # 111TW6003 -----		1	-	-	-	-	-	-	-	-	-	-	-	1
12434262														
LINK	T210N	1	-	-	-	-	-	-	1	-	-	-	-	-

FAA SIGNIFICANT OCCURRENCE REPORT INDEX 2/8/98 To 2/14/98 (cont'd)

<u>PART NUMBER</u>		<u>YEAR</u>													
<u>PART NAME</u>	<u>ACFT MODEL</u>	<u>TOTAL</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	
12434262															
LINK ASSY	210L	1	-	-	-	-	-	-	-	-	1	-	-	-	
TORQUE KNEE	T210N	1	-	-	-	-	-	-	1	-	-	-	-	-	
TORQUE LINK	210N	1	-	-	-	-	-	-	-	-	-	-	1	-	
	P210N	1	-	-	-	-	-	-	-	-	-	-	-	1	
TOTAL of # 12434262 -----		5	-	-	-	-	-	-	2	-	1	-	1	1	
1555M14604															
DUCT	A300B4203	1	-	-	-	-	-	-	-	-	-	-	-	1	
TOTAL of # 1555M14604 -----		1	-	-	-	-	-	-	-	-	-	-	-	1	
252501FCC															
PISTON RING	unknown	1	-	-	-	-	-	-	-	-	-	-	-	1	
TOTAL of # 252501FCC -----		1	-	-	-	-	-	-	-	-	-	-	-	1	
3008787															
BEARING	EMB110P1	1	-	-	-	1	-	-	-	-	-	-	-	-	
ROD END	208B	1	-	-	-	-	1	-	-	-	-	-	-	-	
	560CESSNA	1	-	-	-	-	1	-	-	-	-	-	-	-	
	99A	1	-	-	-	-	-	-	-	-	-	-	-	1	
	C90A	1	-	-	-	-	-	1	-	-	-	-	-	-	
	EMB110P1	1	-	-	-	-	-	-	-	-	-	1	-	-	
ROD ENDS	208B	1	-	-	-	1	-	-	-	-	-	-	-	-	
TOTAL of # 3008787 -----		7	-	-	-	2	2	1	-	-	-	1	-	1	
31021731															
DIFFUSER VANE	SA226TB	1	-	-	-	-	-	-	-	-	-	-	-	1	
TOTAL of # 31021731 -----		1	-	-	-	-	-	-	-	-	-	-	-	1	
329B7A															
FLIGHT DIRECTOR	SA226AT	1	-	-	-	-	-	-	-	-	-	-	-	1	

FAA SIGNIFICANT OCCURRENCE REPORT INDEX 2/8/98 To 2/14/98 (cont'd)

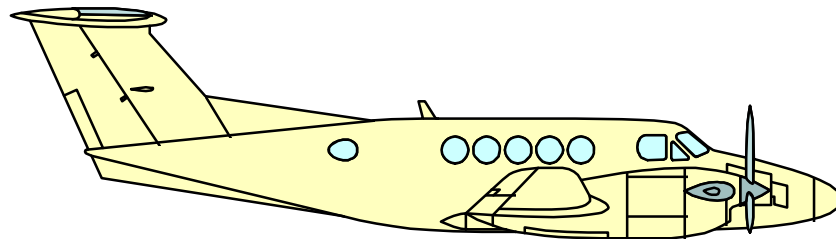
<u>PART NUMBER</u>		<u>YEAR</u>													
<u>PART NAME</u>	<u>ACFT MODEL</u>	<u>TOTAL</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	
TOTAL of # 329B7A -----		1	-	-	-	-	-	-	-	-	-	-	-	1	
43013761															
MANIFOLD	BK117A3	1	-	-	-	-	-	-	-	-	-	-	-	1	
	BK117A4	1	-	-	-	-	-	-	-	-	-	-	-	1	
TOTAL of # 43013761 -----		2	-	-	-	-	-	-	-	-	-	-	-	2	
453005509															
FITTING	1124	1	-	-	-	-	-	-	-	-	-	-	-	1	
TOTAL of # 453005509 -----		1	-	-	-	-	-	-	-	-	-	-	-	1	
638873															
FILTER	PA32R301	1	-	-	-	-	-	-	-	-	-	-	-	1	
TOTAL of # 638873 -----		1	-	-	-	-	-	-	-	-	-	-	-	1	
674200605															
STRUT	750	1	-	-	-	-	-	-	-	-	-	-	-	1	
TOTAL of # 674200605 -----		1	-	-	-	-	-	-	-	-	-	-	-	1	
9591911295															
BUSHING	B95	1	-	-	-	-	-	-	-	-	-	-	-	1	
TOTAL of # 9591911295 -----		1	-	-	-	-	-	-	-	-	-	-	-	1	
A47102															
COUNTERWEIGHT	unknown	1	-	-	-	-	-	-	-	-	-	-	-	1	
TOTAL of # A47102 -----		1	-	-	-	-	-	-	-	-	-	-	-	1	
CF6RHFRAF1															
THRUST REVERSER	A300B4203	1	-	-	-	-	-	-	-	-	-	-	-	1	
TOTAL of # CF6RHFRAF1 -----		1	-	-	-	-	-	-	-	-	-	-	-	1	
GD203															
DRIVESHAFT	G159	1	-	-	-	-	-	-	-	-	-	-	-	1	
TOTAL of # GD203 -----		1	-	-	-	-	-	-	-	-	-	-	-	1	
MS21251B25															
TURNBUCKLE	340A	1	-	-	-	-	-	-	-	-	-	-	-	1	
	E90	1	-	-	-	-	-	1	-	-	-	-	-	-	
TOTAL of # MS21251B25 -----		2	-	-	-	-	-	1	-	-	-	-	-	-	

FAA SIGNIFICANT OCCURRENCE REPORT INDEX 2/8/98 To 2/14/98 (cont'd)

<u>PART NUMBER</u>		<u>YEAR</u>												
<u>PART NAME</u>	<u>ACFT MODEL</u>	<u>TOTAL</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>
MS949034														
BOLT	1900D	1	-	-	-	-	-	-	-	-	-	-	-	1
CARRIER BOLTS	unknown	1	-	-	-	-	-	-	-	-	-	-	1	-
TOTAL of # MS949034 - - - - -		2	-	-	-	-	-	-	-	-	-	-	1	1
S122217														
CABLE	150J	1	-	-	-	-	-	-	-	-	1	-	-	-
	150M	1	-	-	-	-	-	-	-	-	-	-	-	1
TOTAL of # S122217 - - - - -		2	-	-	-	-	-	-	-	-	1	-	-	1
TB2														
TERMINAL BOARD	402B	1	-	-	-	-	-	-	-	-	-	-	-	1
TOTAL of # TB2 - - - - -		1	-	-	-	-	-	-	-	-	-	-	-	1
TOTAL for ALL (44) PART NUMBERS: - - - -		44	-	-	-	3	2	2	3	2	2	2	4	24
END OF SIGNIFICANT OCCURRENCE REPORT INDEX														



DOMESTIC SERVICE DIFFICULTY REPORT



DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT**2/8/98 - 2/14/98 ISSUE: 98-07 ZAC-327**

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
5220	175SA BB183	BEECH 200BEECH				WINDOW 1014301835	CRACKED 1ST CABIN RT	7526	1/7/97 98ZZZX539
INSPECTION FOUND WINDOW IN ESCAPE HATCH CRACKED.									
5620	175SA BB183	BEECH 200BEECH				WINDOW 1014301835	CRACKED 3RD CABIN LT	7489	11/26/97 98ZZZX540
INSPECTION FOUND WINDOW CRACKED TOWARD FRONT SIDE.									
5620	175SA BB183	BEECH 200BEECH				WINDOW 1014301835	CRACKED 3RD CABIN RT	7526	1/7/97 98ZZZX541
INSPECTION FOUND WINDOW CRACKED ALMOST ALL THE WAY AROUND AFT SIDE.									
5712	5ST BB289	BEECH 200BEECH				RIB	CRACKED WS 46,65,85	7206	12/6/97 98ZZZX626
*****	RIBS ON THE LEFT WING, ONE STRINGER AFT OF THE LEADING EDGE AT WS 56.50, WS 65.50, AND WS 85.00 ARE CRACKED WHERE THE STRINGER AND RIB ATTACH. THE CRACKS GO FROM THE RIVET HOLE FORWARD TO THE LEADING EDGE OF RIB SECTION. SUSPECT CRACKS ARE DUE TO THE FLEXING OF THE WING OVER TIME. REPAIRED BY INSTALLATION OF A DOUBLER.								
5712	520MC BB43	BEECH 200BEECH				RIB	CRACKED LT WS 56-65-75	8600	12/1/97 98ZZZX613
DURING AN EVENT 1 INSPECTION, 3 RIBS ON THE LEFT INBOARD WING AT STA 56.00, STA 65.50, AND STA 75.50 AND ONE ON THE RIGHT AT STA 65.50 WERE FOUND CRACKED ON THE FORWARD RIVET WHERE THE STRINGER IS ATTACHED. THE CRACK WENT FROM THE RIVET HOLE FORWARD TO THE EDGE OF THE RIB. SUBMITTER STATED CAUSE IS UNKNOWN, BUT SUSPECT IT IS DUE TO FLEXING OF THE WING. REPAIRED BY INSTALLING A DOUBLER.									
5720	520MC BB43	BEECH 200BEECH				NUTPLATE	CRACKED LT LE WING ROOT	8600	12/1/97 98ZZZX610
DURING AN INSPECTION OF THE AIRCRAFT, THE LEFT LEADING EDGE WING ROOT FAIRING WAS REMOVED TO PERFORM MAINTENANCE. A 2.50 INCH CRACK WAS FOUND FROM ONE OF THE RIVETS WHICH HOLD THE NUTPLATE IN PLACE FOR THE WING ROOT FAIRING IN THE PRESSURE VESSEL AREA. CRACK WAS STOP DRILLED AND A DOUBLER WAS INSTALLED.									
5730	520MC BB43	BEECH 200BEECH				SKIN	CRACKED LT/RT WING	8600	12/1/97 98ZZZX611
DURING AN EVENT 1 INSPECTION, CRACKS IN THE WING SKIN IN THE AREA OF THE LEFT AND RIGHT LOWER WING BOLT FITTING WERE FOUND. THESE CRACKS TEND TO GO THROUGH THE HOLES WHERE SCREWS ARE USED TO SECURE THE SKIN TO THE WING SPAR CAP, AND EXTEND TO THE HOLE IN THE SKIN FOR THE FUEL DRAIN. SUBMITTER STATED SEVERAL OF THE E-90 FLEET HAVE HAD DOUBLERS INSTALLED TO REPAIR THIS PROBLEM IN THE PAST.									
5730	520MC BB43	BEECH 200BEECH				SKIN	CRACKED RT WING FUEL	8600	12/1/97 98ZZZX612
DURING AN EVENT 1 INSPECTION, A .50 INCH CRACK WAS FOUND IN THE SKIN AFT OF THE RIGHT FUEL FILLER CAP. THE CRACK APPEARS TO BE DUE TO IMPROPER USE OF THE FUEL NOZZLE DURING FUELING. INSTALLATION OF AN INTERNAL DOUBLER WAS REQUIRED.									
5741 UJJR	2MIL BC15	BEECH A200				BOLT KIT 10140261S	WRONG PARTS WING ATTACH	1/20/98	98ZZZX530
*****	THE BOLT KIT LISTED IS FOR THE UPPER AND LOWER AFT WING ATTACH FITTINGS FOR A BEECH SERIES 200, UPON RECEIVING 4 OF THESE KITS, NOTICED THE WASHERS INCLUDED IN THE KIT DID NOT HAVE A SMOOTH CONTINUOUS OUTER RADIUS WHICH IS NOTED IN BEECH 200 SRM CH 57-17-01 PAGE 212, FIG 207. SMOOTH OUTER RADIUS IS TO GO AGAINST 'BATHTUB' FITTING SO AS NOT TO SET UP STRESS. COULD NOT USE THESE WASHERS AND HAD TO ORDER MORE. SUBMITTER SUGGESTED BETTER QC ON RAYTHEONS PART COULD PREVENT DELAYS SUCH AS THIS.								

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5741 UJJR	2MIL BC15	BEECH A200				BOLT KIT 10140251S	WRONG PARTS WING ATTACH	1/19/98 98ZZZX531	
THE BOLT KIT LISTED IS FOR THE UPPER FORWARD WING BOLTS FOR A BEECH 200. UPON RECEIVING 2 EACH KITS, NOTED THE WASHERS INCLUDED WERE NOT PROPERLY RADIUSED ON THE OUTER EDGE. THE BEECH 200 SRM CH 57-17-01 P 212 SPECIFICALLY INSTRUCTS TO INSTALL SMOOTH CONTINUOUS OUTER RADIUS TOWARD 'BATHTUB' FITTING. WASHERS WITH KITS WERE FLAT, AND COULD CAUSE STRESS IF INSTALLED. SUBMITTER SUGGESTED BETTER QUALITY CONTROL ON RAYTHEON'S PART MIGHT PREVENT DELAYS AND PROBLEMS LIKE THIS (NOTE: REPLACEMENT WASHERS SENT HAD SAME PROBLEM).									
5741 UJJR	2MIL BC15	BEECH A200				BARREL NUT 80691CF1612	WRONG PART WING ATTACH	1/18/98 98ZZZX538	
KIT 101-4024-1S CONTAINS THE FORWARD LOWER WING BOLT, PL WASHER AND BARREL NUT FOR INSTALLATION ON BEECH 200 SERIES AIRCRAFT. THE BARREL NUT ASSY PN 80691CF-1612 WAS OF IMPROPER TOLERANCES AND WOULD NOT FIT IN WING 'BATHTUB' FITTING. FURTHER INVESTIGATION REVEALED THE LOCKING NUT PORTION WAS INSTALLED IN ASSY SIDWAYS SO THAT THE OBLONG SHAPE OF NUT WAS CROSS WAYS GIVING THE OVERALL DIMENSIONS MORE WIDTH. SUBMITTER STATED HAVE RECEIVED 2 KITS WITH SAME DISCREPANCY.									
3340 *****	24017 MC478	BEECH C24R				LIGHTS	NOT GROUNDED WING BONDING	1/13/98 98ZZZX638	
TT: 2,065.43 HOURS. THE PILOT REPORTED THAT TURNING ON THE LANDING LIGHTS, NAV LIGHTS, OR PITOT HEAT CAUSED BOTH FUEL GAUGES TO PEG ON FULL. INVESTIGATION DETERMINED THE WING ASSEMBLIES WERE NOT WELL GROUNDED TO THE FUSELAGE. GROUND WIRES WERE ADDED BETWEEN BOTH MAIN WING SPARS AND THE FUSELAGE STRUCTURE TO CORRECT THE PROBLEM. SUBMITTER RECOMMENDED FUEL GAUGES BE WATCHED FOR DEFLECTION WHEN ELECTRICAL EQUIPMENT IS TURNED ON.									
2150 HUNR	1066T E2996	BEECH A36				BELT 6462933400	DELAMINATED AIR CONDITIONING	292 98ZZZX526	1/23/97
AIR CONDITIONING BELT IS A TOOTH-TYPE BELT. FOUND 'TEETH' SECTIONS OF THE INSIDE DIAMETER OF THE BELT LAYING INSIDE THE ENGINE NACELLE. ON INSPECTION, FOUND 2.50 INCH SECTION OF BELT INSIDE EDGE MISSING. ACTT: 292.1 HOURS.									
7603 HUNR	1066T E2996	BEECH A36				SPRING 628371	BROKEN THROTTLE LINK	292 98ZZZX527	1/13/98
FUEL CONTROL/THROTTLE LINKAGE SPRING BROKEN. LOW HOURS SINCE NEW.									
5522	7700R TE633	BEECH D55				SKIN 9661000649	CRACKED LT ELEVATOR	1/23/98 98ZZZX609	
DURING RAMP INSPECTION, FOUND CRACK IN TOP SKIN JUST OUTBOARD OF OUTBOARD HINGE POINT. CRACK ALIGNED WITH CRACK IN SKIN P/N 96-610006-3. SUB-SURFACE STRUCTURE SHOWED NO DAMAGE, BUT CRACKED PAINT IN BALANCE WEIGHT ATTACH AREA INDICATES PREVIOUS STRESS. AIRCRAFT TOTAL TIME, 4,524 HOURS.									
5522	700R TE633	BEECH D55				SKIN 96610063	CRACKED LT ELEVATOR	1/23/98 98ZZZX608	
DURING RAMP INSPECTION, FOUND CRACK IN TOP SKIN JUST OUTBOARD OF OUTBOARD HINGE POINT. CRACK ALIGNED WITH CRACK IN SKIN P/N 96-61006-49. SUB-SURFACE STRUCTURE SHOWED NO DAMAGE, BUT CRACKED PAINT IN BALANCE WEIGHT ATTACH AREA INDICATES PREVIOUS STRESS. AIRCRAFT TT 4,524 HOURS.									
6120 KZ5R	70DD TH370	BEECH 58				CABLE 5038901023	FAILED PROP CONTROL	200 98ZZZX551	1/19/98
PROPELLER CONTROL CABLE BROKE AT ENGINE END AT THE POINT WHICH THREADED END IS CRIMPED ON TO CABLE END.									
7160 *****	2012C TD430	BEECH B95			9591911419	BUSHING 9591911295	WORN RT CARB AIR BOX	8269 98ZZZX519	12/24/97
THE RIVETS ATTACHING THE WELD ASSY BUSHING PN 95-91912-95 TO THE RT ENGINE CARBURETOR AIR BOX ASSY PN 95-919114-19 WORKED LOOSE CAUSING THE BUTTERFLY IN THE CARBURETOR HEAT BOX TO BECOME LODGED IN THE CARBURETOR HEAT ON POSITION RESULTING IN A FUEL RICH CONDITION FOR THE ENGINE. WHEN THE CARBURETOR HEAT CONTROL WOULD NOT PUSH IN TO TURN HEAT OFF (BECAUSE OF STUCK BUTTERFLY), THE PILOT OPTED TO SHUT DOWN THE ENGINE.									

***** DENOTES SIGNIFICANT OCCURRENCE

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5553	51400	CESSNA				FITTING	CRACKED		12/19/97
	150699981	150J				04311481	VERTICAL STAB		98ZZZX557
*****	INSPECTION FOUND VERTICAL STABILIZER ATTACH FITTING CRACKED.								
7603	704AC	CESSNA				CABLE	FAILED	2306	1/24/98
	15078450	150M				S122217	THROTTLE		98ZZZX514
*****	THROTTLE CABLE PLASTIC OUTER COVER MADE OF PLASTIC BECAME BRITTLE FROM AGE AND HEAT AND FAILED. THE WHOLE ASSEMBLY WAS MOVING WITH POWER CHANGES. SUBMITTER STATED THESE ORIGINAL CESSNA SUPPLIED CABLES ARE ALL REACHING THEIR SERVICE LIFE ON PLASTIC DETERIORATION. SUBMITTER HAS NOTICED THIS ON MODEL 172 AND MODEL 150 AIRCRAFT.								
2434	73671	CESSNA		FORD		ALTERNATOR	FAILED	342	1/12/98
	17267605	172M				DOFF10300J	BRUSH		98ZZZX553
	ALTERNATOR WAS OVERHAULED BY ELECTROSYSTEMS, INC. AFTER FAILURE, UNIT WAS OPENED AND ONE BRUSH WAS FOUND WORN COMPLETELY DOWN TO WIRE INSERT. SLIP RING WAS GROOVED DUE TO CONTACT WITH INSERT. ALTERNATOR HAD ONLY 341.8 HOURS SINCE OVERHAUL AND ONLY 8 MONTHS. SECOND BRUSH WAS IN GOOD SHAPE. THERE WERE NO SIGNS OF BRUSH BEING IMPROPERLY INSTALLED OR DAMAGED, JUST WORE EXTREMELY QUICK. SUSPECT COMPOSITION OF BRUSH MATERIAL WAS NOT CORRECT.								
2460	97100	CESSNA				FUSE CONNECTOR	FAILED	250	1/20/98
WIWR	17280100	172R		MC012		AT30	POWER JUNCT BOX		98ZZZX513
	FOUND COLD SOLDER AT FUSE CONNECTION FOR NR 1 BUS. WIRE PULLED OUT AFTER TROUBLESHOOTING DEFECTIVE BUS, COLD WIRE WAS NOT INSTALLED IN RETAINING HOLE, BUT LAID ON TOP AND IMPROPERLY SOLDERED AND COVERED WITH HEAT SHRINK.								
3213	5510R	CESSNA				FITTING	CRACKED	6312	1/20/98
	172RG0066	172RG				22411001	MLG LEG		98ZZZX515
	MLG LEG FITTING FOUND CRACKED. SUBMITTER STATES POSSIBLE CAUSE AS HARD LANDINGS.								
5412	376ES	CESSNA				FIREWALL	CRACKED	271	12/1/97
BWRR	17280059	172R					LOWER LEFT		98ZZZX564
	DURING ANNUAL INSPECTION, FOUND FIREWALL CRACKED UNDER COWL FASTENER DOUBLER. AIRCRAFT HAS ONLY 271.0 HOURS TOTAL TIME. ADVISED MANUFACTURER CRACK WAS 2 INCHES LONG WITH ANOTHER CRACK 1 INCH LONG PROTRUDING FROM THE 2 INCH CRACK MAKING A 'Y'.								
2701	3655U	CESSNA				YOKE	FAILED	4113	1/7/97
	18255055	182F				051316714	PILOTS		98ZZZX550
	WHILE CHECKING ELEVATOR TRAVEL, YOKE BROKE WHEN BROUGHT UP AGAINST ELEVATOR STOP LEAVING BROKEN PART IN HAND. RECOMMEND PULL TEST.								
2810	1691R	CESSNA				DRAIN VALVE	LEAKING		1/21/98
	R18200516	R182					LT WING FUEL		98ZZZX521
	LEFT WING FUEL SAMPLE DRAIN VALVE DRIPPING AND THEN REMAINING OPEN. UPON DISMANTLE, THE O-RING WAS FOUND BROKEN IN 3 PLACES AND SEPARATED INTO 2 PIECES. THE BROKEN O-RING PIECES LODGED IN THE FORWARD FLOW HOLES AND KEPT THE VALVE STEM OPEN. UPON MEASUREMENT OF THE VALVE STEM DIAMETER AT THE O-RING POSITION, THE DIAMETER WAS .028 INCH LARGER THAN A VALVE STEM REMOVED EARLIER.								
3221	7285Q	CESSNA				FITTING	CRACKED		1/19/98
VH3R	18260256	182P				07436062	NLG ATTACH		98ZZZX529
*****	FOUND THE LOWER NOSE GEAR FITTING CRACKED AT THE COLLAR. NOSE GEAR COLLAR WAS SEPARATED FROM THE ATTACH FITTING. ONLY THE UPPER ATTACH FITTING WAS HOLDING THE NOSE GEAR TO THE AIRFRAME. AFTER THE LOWER ATTACH FITTING WAS REMOVED, A CRACK WAS FOUND HALF-WAY ACROSS THE LT REAR ATTACHMENT EAR. CAUSE OF DEFECT UNKNOWN.								

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5751 COEA	918FE 208B0018	CESSNA 208B				SERVO TAB 26240121	CRUSHED LT AILERON		11/24/97 COEA9701918
PARKED AIRCRAFT 918FE WAS RUN INTO BY A TAXIING AIRCRAFT. THE LEFT SERVO TRIM TAB WAS CRUSHED AND THE LEFT WING UNDERSIDE RECEIVED A .0625 INCH WIDE SCRATCH IN THE PAINT FROM TRAILING EDGE TO LEADING EDGE 2 FEET FROM THE WING TIP. A SMALL DENT .0937 INCH DEEP WAS FOUND WHERE THE SCRATCH MET THE WING SKIN TRAILING EDGE. ALL SCRATCHES AND DENTS WERE NEGLIGIBLE DAMAGE PER THE CESSNA SRM 57-10-00. NO DAMAGE WAS FOUND TO THE AILERON OR ATTACH POINTS. THE SERVO TAB WAS REPLACED PER CESSNA MM 57-60-00, AND THE AIRCRAFT WAS RETURNED TO SERVICE. (X)									
3222 *****	323DC P21000365	CESSNA P210N				TORQUE LINK 12434262	FAILED NLG	3615	1/15/98 98ZZZX546
WHILE TAXIING BACK AFTER LANDING ON GRASS STRIP, NOSE WHEEL GAVE SLIGHT SHIMMY AND AIRCRAFT VEERED TO A STOP. UPPER TORQUE LINK WAS BROKEN IN HALF MIDWAY BETWEEN BOLT HOLES. NO SIGNS OF PRIOR CRACKING.									
3222	732DK 21061432	CESSNA T210L				PISTON ASSEMBLY 1243009201	BROKEN NOSE GEAR	2838	12/28/97 98ZZZX544
AIRCRAFT EXPERIENCED A NOSE LANDING GEAR FAILURE DURING TAXI OPERATIONS AFTER LANDING. SUBSEQUENT INSPECTION REVEALED THE FORK AND PISTON ASSEMBLY BROKE AT THE CASTING AREA LOCATED AT THE POINT WHERE BOTH FORKS ATTACH TO THE PISTON ASSEMBLY.									
5520	2306D 21063828	CESSNA 210				CHANNEL 123262226	CRACKED ELEVATOR	3303	1/8/98 98ZZZX555
ELEVATOR CHANNEL HAS 7 LOCATIONS WHERE BUCKING BAR SLIPPED OFF OF RIVET TAIL AND INDENTED STRUCTURE. CRACKS HAVE FORMED AT ALL 7 LOCATIONS. THIS DEFECT IS ORIGINAL FROM FACTORY. SUBMITTER STATED THIS IS THE 2ND PART WITH THE SAME DEFECT FOUND.									
2720 *****	98904 310R1240	CESSNA 310R				RUDDER PEDAL 086170040	FAILED PILOT LT		1/23/98 98ZZZX512
AFTER STARTING ENGINES TO REPOSITION AIRCRAFT, PILOT PUSHED ON LEFT RUDDER PEDAL AND PEDAL BROKE OFF AT BASE WHERE IT IS WELDED TO PEDAL ARM ASSY. AIRCRAFT TOTAL TIME 5,980 HOURS. PART MAY HAVE BEEN ORIGINAL. ANNUAL INSPECTION, 6 MONTHS PRIOR. HAVE HEARD OF SAME PROBLEM WITH SIMILAR AIRCRAFT. SUBMITTER SUGGESTED MORE FREQUENT AND CLOSER INSPECTIONS.									
2721 *****	6335X 340A0504	CESSNA 340A				TURNBUCKLE MS21251B25	SPLIT RUD TRIM CABLE	3086	1/26/98 98ZZZX645
DURING ADJUSTMENT OF RUDDER TRIM CABLES, ONE TURNBUCKLE WAS FOUND SPLIT DOWN THE SIDES. THE CABLE ENDS WERE NOT BOTTOMED OUT. POSSIBLE DEFECT CAUSED FROM OVERTIGHTENING CABLE AT SOME TIME. SUBMITTER RECOMMENDED CLOSE INSPECTION OF TURNBUCKLES AT REGULAR INSPECTIONS.									
2460 *****	6387X 402B1350	CESSNA 402B				TERMINAL BOARD TB2	SHORTED WS 27.125	4430	12/10/97 98ZZZX637
DURING ROUTINE MAINTENANCE, CHANGING RIGHT COWL FLAP CABLE, THE HEATER'S FUEL LINE CONTACTED THE NON-INSULATED TERMINAL BOARD'S STUD AT RIGHT WING STA 27.125. PLACING MASTER SWITCH IN ON POSITION PROVIDED A SHORT CIRCUIT AND FIRE. THE TERMINAL BOARD'S STUDS NEED TO BE INSULATED FROM FUEL AND OIL LINES IN IMMEDIATE AREA.									
5730	400AR 402B0338	CESSNA 402B				SKIN	CRACKED LT/RT WS 57.5	7929	1/9/98 98ZZZX556
CRACK IN UPPER WING SKIN ABOVE GEAR SUPPORT FOUND DURING 100-HOUR INSPECTION. SUBMITTER STATED POSSIBLY CAUSED BY A HARD LANDING.									
3231 CM2R	421CP 421B0015	CESSNA 421B				BELLCRANK 08411066	CRACKED RT MLG DOOR	5549	1/19/98 98ZZZX641
RIGHT MLG DOOR BELLCRANK CRACK APPEARED TO START AT UPPER FORWARD. SUBMITTER STATED WAS CRACKED FOR SOME TIME BEFORE FAILURE.									

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2430 B3OR	2531K 5500594	CESSNA 550				RELAY A876P	INTERMITTENT BAT DISCONNECT		1/27/98 98ZZZX614
UPON REMOVAL OF THIS RELAY FOR REPLACEMENT, LOOSE HARDWARE WAS HEARD RATTLING AROUND INSIDE. SUBMITTER STATED THIS IS A CONTINUING PROBLEM WITH THIS TYPE AND PART NUMBER RELAY AND HAS BEEN FOUND ON SEVERAL OTHER OCCASIONS. THE RELAY WOULD NOT HAVE FAILED HAD IT NOT BEEN FOR THE LOOSE HARDWARE INSIDE. THIS RELAY IS THE BATTERY DISCONNECT RELAY AND HANDLES LARGE AMOUNTS OF CURRENT (200 AMPS). WHEN THE RELAY FAILS, IT ALLOWS THE AIRCRAFT BATTERY TO BE DISCHARGED THROUGH THE APU!									
5711 SI6R	293S 5000193	CESSNA 500CESSNA				CAP STRAP 55221119	CORRODED LT WING SPAR	6518	2/2/98 98ZZZX543
DURING THE PROCESS OF A NON-SCHEDULED INSPECTION, THE LEFT WING UPPER SPAR CAP STRAP WAS FOUND CORRODED AROUND THE EDGES. FURTHER, NDT INSPECTION REVEALED CORROSION BETWEEN THE STRAP AND THE DOUBLER. CAUSE OF THE CORROSION COULD HAVE BEEN IMPROPER SEALING AROUND THE PERIPHERY OF THE STRAP. SB 500-57-13 WAS PERFORMED TO REPLACE THE STRAP.									
2910 HXUA	78384 500B1297112	GULSTM 500B				LINE 790220	RUPTURED LT/RT WS 24	21000	1/14/98 98ZZZX552
HYDRAULIC LEAK IN PRESSURE LINE LEFT AND RIGHT WING AT WS 24. LINE FAILED BECAUSE OF CORROSION PITS UNDER IDENTIFICATION TAPE. AREA NORMALLY IS FREE OF MOISTURE.									
5620 IZ2R	44MM 1526SA	MTSBSI MU2B60				WINDOW	CRACKED RT FWD CABIN	8386	1/21/98 98ZZZX605
DURING CLIMB, AIRCRAFT SLOWLY LOST PRESSURIZATION. A PASSENGER NOTICED NR 1 RIGHT CABIN WINDOW CRACKED. AN EMERGENCY WAS DECLARED AND A LANDING WAS MADE WITHOUT INCIDENT. DAMAGE FROM WINDOW WAS FOUND ON RIGHT PROPELLER AND RIGHT HORIZONTAL STABILIZER. RIGHT PROPELLER SENT TO PROP REPAIR STATION. RIGHT ENGINE INSPECTED PER ALLIED SIGNAL MM.									
3231	6899L 608365011	PIPER PA60602P				BELLCRANK 400088002	CRACKED RT GEAR DOOR		1/29/98 98ZZZX636
PILOT NOTICED THE GEAR REQUIRED CYCLING TWICE BEFORE THE UP AND LOCKED LIGHT WOULD ILLUMINATE. INSPECTION AFTER LANDING FOUND BELCRANK THAT ATTACHES TO INBOARD DOOR LOWER PUSH/PULL TUBE WAS CRACKED ALLOWING DOOR TO FALL OPEN.									
2720 BXSР	272HJ 317712055	PIPER PA31310				TORQUE TUBE 40040009	CORRODED RUDDER		11/1/97 98ZZZX634
FOUND THE RUDDER TORQUE TUBE AND WELDED ON ASSEMBLIES VERY CORRODED. THE WELDED ON PLATE IS ABOVE THE BOTTOM RIB ON THE RUDDER AND CAN ONLY BE SEEN THROUGH A SMALL CUT-OUT IN THE RIB WHERE THE TORQUE TUBE PASSES THROUGH. THE BOTTOM RIB (PN 40039-00) WAS ALSO UNAIRWORTHY DUE TO CORROSION.									
2731 BXSР	272HJ 317712055	PIPER PA31310				CABLE 4248403	DEFECTIVE ELEVATOR TRIM	3572	11/1/97 98ZZZX630
FOUND THE ELEVATOR TRIM CABLE SPLICED IN TWO PLACES BOTH OF WHICH PASSED AROUND THE SERVO CAPSTAN. THERE IS NO RECORD OF THE SPLICES BEING DONE IN THE LOG BOOKS. THE TRIM SERVO MOTOR HAD BEEN REPLACED 30 HOURS PREVIOUSLY DUE TO IT BEING BURNED OUT (DID THE SPLICES STRESS THE MOTOR?)									
2912 BXSР	272HJ 317712055	PIPER PA31310				SPRING 756164	MISSING LT/RT HYD FILTER	3572	11/1/97 98ZZZX629
BOTH THE LEFT AND RIGHT HYDRAULIC FILTER HOUSINGS WERE MISSING THEIR SPRINGS. THE SPRINGS HOLD THE FILTER IN PLACE AND WILL COMPRESS SHOULD THE FILTER PLUG UP. IT IS POSSIBLE THE FILTER COULD FALL OFF ITS INSTALLED POSITION WITHOUT THE SPRING IN PLACE.									
3213 BXSР	272HJ 317712055	PIPER PA31310				TRUNNION 4205907	CORRODED MLG	3572	11/1/97 98ZZZX633
INSPECTION FOUND THE CYLINDER SIDEWALL (ON THE OUTSIDE) WITH DEEP INTERGRANULAR GALVANIC CORROSION. THIS CORROSION IS HARD TO SPOT DUE TO ITS BEING IN THE GEARWELL AND BEHIND A LARGE HOSE CLAMP BRACKET.									

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5520 BXHR	272HJ 317712055	PIPER PA31310				BOOT 453226	MISSING ELEVATOR	3572	11/1/97 98ZZZX631
FOUND ONE ELEVATOR COUNTER BALANCE LEADING EDGE BOOT MISSING AND THE FIBERGLASS SUB-SURFACE WAS ERODED. THE OTHER BOOT WAS TORN WHICH ALLOWS WATER TO GET INSIDE THE BOOT WHICH WILL CHANGE THE BALANCE OF THE CONTROL SURFACE.									
5541 BXHR	272HJ 317712055	PIPER PA31310				RIB 4003900	CORRODED RUDDER		11/1/97 98ZZZX635
FOUND THE RUDDER TORQUE TUBE AND WELDED ON ASSEMBLIES VERY CORRODED. THE WELDED ON PLATE IS ABOVE THE BOTTOM RIB ON THE RUDDER AND CAN ONLY BE SEEN THROUGH A SMALL CUT-OUT IN THE RIB WHERE THE TORQUE TUBE PASSES THROUGH. THE BOTTOM RIB (PN 40039-00) WAS ALSO UNAIRWORTHY DUE TO CORROSION.									
5753 BXHR	272HJ 317712055	PIPER PA31310				ROLLERS	SEIZED FLAP		11/1/97 98ZZZX632
FOUND THE FLAP ROLLERS NOT TURNING DUE TO PAINT BEING ON THE ROLLERS AND TRACKS. ALSO, FOUND FLIGHT CONTROL SURFACE HARDWARE COVERED WITH PAINT (WHERE THE CONTROLS EVEN OFF) AND THE CONTROL SURFACE LEADING EDGES HAD NO PAINT ON THEM. AIRCRAFT WAS PAINTED 1/94 BY CIMARRON AIRCRAFT CORP IN EL RENO, OK.									
3211	37RE 32R7780114	PIPER PA32R300				MOUNT 6704014	CRACKED MLG LT FWD		2/2/98 98ZZZX675
ANNUAL INSPECTION OF MLG AREA REVEALED LT FWD MLG TRUNNION MOUNT CRACKED THROUGH 3 OF THE 4 MOUNT BOLT HOLES. FURTHER INSPECTION OF LT AFT AND RT FWD AND AFT. MAINTENANCE REVEALED 2 ADDITIONAL MOUNTS CRACKED THROUGH BOLT HOLES. REMOVED MOUNTS AND INSPECTED SPAR. STRIPPED AND INSPECTED MLG TRUNNIONS AND FOUND LT TRUNNION CRACKED ABOUT 2 INCHES LONG AT POINT OF WEBBING AND BARREL.									
5743	37RE 32R7780114	PIPER PA32R300				MOUNT 6704213	CRACKED MLG RT AFT		2/2/98 98ZZZX672
ANNUAL INSPECTION OF MLG AREA REVEALED LT FWD MLG TRUNNION MOUNT CRACKED THROUGH 3 OF THE 4 MOUNT BOLT HOLES. FURTHER INSPECTION OF LT AFT AND RT FWD AND AFT. MAINTENANCE REVEALED 2 ADDITIONAL MOUNTS CRACKED THROUGH BOLT HOLES. REMOVED MOUNTS AND INSPECTED SPAR. STRIPPED AND INSPECTED MLG TRUNNIONS AND FOUND LT TRUNNION CRACKED ABOUT 2 INCHES LONG AT POINT OF WEBBING AND BARREL.									
5743	37RE 32R7780114	PIPER PA32R300				TRUNNION 67926030	CRACKED LT MLG		2/2/98 98ZZZX673
ANNUAL INSPECTION OF MLG AREA REVEALED LT FWD MLG TRUNNION MOUNT CRACKED THROUGH 3 OF THE 4 MOUNT BOLT HOLES. FURTHER INSPECTION OF LT AFT AND RT FWD AND AFT. MAINTENANCE REVEALED 2 ADDITIONAL MOUNTS CRACKED THROUGH BOLT HOLES. REMOVED MOUNTS AND INSPECTED SPAR. STRIPPED AND INSPECTED MLG TRUNNIONS AND FOUND LT TRUNNION CRACKED ABOUT 2 INCHES LONG AT POINT OF WEBBING AND BARREL.									
5743	37RE 32R7780114	PIPER PA32R300				MOUNT 6704014	CRACKED MLG LT AFT		2/2/98 98ZZZX674
ANNUAL INSPECTION OF MLG AREA REVEALED LT FWD MLG TRUNNION MOUNT CRACKED THROUGH 3 OF THE 4 MOUNT BOLT HOLES. FURTHER INSPECTION OF LT AFT AND RT FWD AND AFT. MAINTENANCE REVEALED 2 ADDITIONAL MOUNTS CRACKED THROUGH BOLT HOLES. REMOVED MOUNTS AND INSPECTED SPAR. STRIPPED AND INSPECTED MLG TRUNNIONS AND FOUND LT TRUNNION CRACKED ABOUT 2 INCHES LONG AT POINT OF WEBBING AND BARREL.									
7160 N81R	581EW 3246070	PIPER PA32R301			FACET	FILTER 638873	DETERIORATED INDUCT AIR	212	1/27/98 98ZZZX644
***** THE FAA-PMA FACET INDUCTION AIR FILTER WAS FOUND DURING AN INSPECTION WITH THE BLACK RUBBER INTERIOR EDGE DETERIORATING. THE FILTER HAD 212.1 HRS SINCE THE AIRCRAFT WAS NEW AND 10 MONTHS SINCE AIRCRAFT WAS ISSUED ITS ORIGINAL AIRWORTHINESS. THE DETERIORATION IS ON THE INBOARD SIDE OF FILTER WHERE IT CAN BE INJECTED BY ENGINE.									
2731	15412 347350060	PIPER PA34200				CABLE 6270197	FRAYED AP ELEV TRIM	1288	12/24/97 98ZZZX522
AFT ELEVATOR TRIM/AUTOPILOT CABLE FRAYED WHERE IT GOES AROUND ELECTRIC TRIM AND AUTOPILOT SERVO PULLEYS.									

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
3231	666AS	PIPER				ACTUATOR	LEAKING	200	1/20/98
RF1R	4622186	PA46350P				1122	NLG DOOR		98ZZZX525
FOUND NOSE GEAR DOOR ACTUATOR LEAKING INTERNALLY THROUGH AIR ORIFICE. OVERHAUL KIT NO LONGER AVAILABLE. REPLACED UNIT WITH NEW UNIT FROM PIPER.									

(End of DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT)

DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS**2/8/98 - 2/14/98 ISSUE: 98-07 ZAC-327**

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
5310	120VT 0222	AMTR MINI500				FRAME	CRACKED M/R GEARBOX	1/22/98	98ZZZX502
*****	MOST ALL MINI-500 AIRFRAMES HAVE CRACKED NEAR THE MAIN ROTOR GEARBOX MOUNT BOLT HOLES. ALL ARE LOW TIME ANYWHERE FROM 6 HOURS AND UP. AIR FRAME TUBE STRUCTURE MAY BE OF TOO THIN MATERIAL. SUBMITTER BELIEVES CRACKS FORM BECAUSE OF THE INABILITY TO TRACK AND BALANCE ROTOR BECAUSE OF A FLAW IN THE MAIN ROTOR MAST. THE INSIDE OF MAST IS NOT CONCENTRIC WITH THE OUTSIDE. THE LOWER SWASHPLATE ATTACHES TO THE INSIDE OF SHAFT AND NOW HAS A SEVERE WOBBLE SINCE IT IS NOT CONCENTRIC. THIS AIRCRAFT, SN 0222, CONTINUES TO CRACK EVEN AFTER APPROVED REPAIRS.								
6230	120VT 0222	AMTR MINI500				SHAFT	MISMANUFACTURED M/R	1/22/98	98ZZZX501
*****	BECAUSE OF MANY PROBLEMS WITH VIBRATIONS CRACKING FRAME, FOUND THE MAIN ROTOR SHAFT HAS AN INTERNAL FLAW. IT WAS MANUFACTURED NOT BEING TRUE INSIDE. THE INSIDE OF ROTOR MAST IS NOT CONCENTRIC WITH OUTSIDE. THE MAIN CONTROL ASSEMBLY (SWASHPLATE) BOLTS TO THE INSIDE OF THIS SHAFT AND NOW HAS A SEVERE WOBBLE BECAUSE OF IT. SUBMITTER STATED THE PARTS ARE MANUFACTURED WITH THIS DEFECT AND THEY STILL CONTINUE TO SELL THSE DEFECTIVE PARTS.								
8520	120VT 0222	AMTR MINI500	ROTAX ROTAX582			ENGINE	SEIZED CRANKSHAFT	1/16/98	98ZZZX486
*****	ENGINE SEIZED IN-FLIGHT. SERVICE CENTER THAT REPAIRED ENGINE SAID COUNTERWEIGHT CAME OFF REAR OF CRANKSHAFT. SERVICE CENTER ALSO SAID THEY BELIEVE THAT COUNTEWEIGHT CAME OFF DUE TO THE WAY REVOLUTION INSTALLS BEARING ON END OF CLUTCH. IT IS HELD STATIONARY WHICH DOES NOT ALLOW END OF CRANKSHAFT TO WOBBLE WHEN IT IS NOT EXACTLY TURNING TRUE. SUBMITTER HAD TO DO AUTOROTATION, NO DAMAGE.								
3444 HEEA	206LS 51070	BELL 206L3				ALTIMETER 066106103	FAILED COCKPIT	2/5/98	HEEA0012787
	RADAR ALTIMETER READS 200 FEET AT ALL TIMES.								
3452 HEEA	104PH 3622	BELL 206B3			KT76	TRANSCIEIVER 066106200	FAILED COCKPIT	2/5/98	HEEA0012788
	TRANSPONDER INOPERATIVE.								
3452 HEEA	2124Z 45646	BELL 206L1			KT76	TRANSCIEIVER 066106200	FAILED COCKPIT	2/5/98	HEEA0012762
	TRANSCIEIVER NO POWER. ADJUSTED CAVITY FOR GOOD POWER OUT AND ON FREQUENCY. REPLACED WEAK V301 PHOTODETECTOR. BENCH CHECK GOOD.								
3457 HEEA	6160Z 51610	BELL 206L3			GPS150	GPS 0110005400	FAILED COCKPIT	2/5/98	HEEA0012789
	GPS BATTERY LOW INDICATED.								
6710 B6HR		BELL 206BELL			RONSON 206003	RETAINER C4264221	CRACKED M/R SERVO	12/11/97	98ZZZX642
	SERVO RETAINER CAME BACK FROM NDT, INDICATED CRACKED.								
6710 B6HR		BELL 206L			RONSON	RETAINER C4264172	CORRODED M/R SERVO	1/9/98	98ZZZX643
	SERVO RETAINER CAME BACK FROM NDT WITH CORROSION INDICATION. RE-CLEANED AND ANODIZED PART.								
7250 HEEA	129MR 51129	BELL 206L3	ALLSN 250C30P		23035128	SUPPORT 23034775	DAMAGED ENG GAS PROD	2/3/98	HEEA0012759
	RECEIVING INSPECTION REVEALED: DAMAGED ON GP SUPPORT AFT FLANGE. INSTALLED A DALLAS AIRMOTIVE OVERHAULED GP SUPPORT.								

***** DENOTES SIGNIFICANT OCCURRENCE

DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS (cont'd)

2/8/98 To 2/14/98 ISSUE: 98-07 ZAC-327

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7314 HEEA	5742N 45477	BELL 206L1				FUEL PUMP 3881005	WORN ENGINE	14063	2/5/98 HEEA0012767
FUEL PUMP EXCESSIVELY WORN INTERNAL SPLINES.									
7712 LS1R	206BY 2871	BELL 206B3				INDICATOR 206075185001	MALFUNCTIONED TORQUE		1/19/98 98ZZZX507
TORQUE INDICATOR GIVES HIGHER TORQUE THAN TESTED.									
7930 HEEA	3905B 45598	BELL 206L1			174000103	INDICATOR 174035201	FAILED ENG OIL		2/5/98 HEEA0012790
INDICATOR INOPERATIVE-DOES NOT WORK. INDICATOR WAS REMOVED FROM BOWL AND CLEANED. INSTALLED INDICATOR BACK ON BOWL, TESTED AND INDICATOR STILL DIDN'T WORK.									
3455 HEEA	3131S 30953	BELL 212				RECEIVER 066104701	FAILED ADF		2/5/98 HEEA0012771
ADF RECEIVER SLOW TO POINT AND LOW AUDIO.									
6310 TI1R	911LW 47520	BELL 222U				COUPLING 222044607003	CORRODED M/R DRIVE		9/2/97 98ZZZX601
M/R DRIVE INNER COUPLING PITTING CORROSION ON TEETH. REJECTED. REMOVED AND REPLACED.									
6310 TI1R	219HM 47573	BELL 222U				COUPLING 222044672101S	CORRODED MAIN DRIVE		10/6/97 98ZZZX602
COUPLING HAS CORROSION, PITTING ON TEETH. DAMAGED BEYOND LIMITS. REJECTED. REMOVED AND REPLACED.									
7310 RMXA	6992 47521	BELL 222U	LYC LTS101750C1			MANIFOLD 430137601	LEAKS ENGINE FUEL		4/1/96 98ZZZX585
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	6992 47521	BELL 222U	LYC LTS101750C1			MANIFOLD 430123604	LEAKS ENGINE FUEL		5/11/97 98ZZZX578
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	6992 47521	BELL 222U	LYC LTS101750C1			MANIFOLD 430128601	LEAKS ENGINE FUEL		11/14/95 98ZZZX588
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7261 HEEA	230UN 23009	BELL 230				FILTER 174250008	DEFECTIVE ENG OIL		2/2/98 HEEA0012756
ENG OIL FILTER NO BYPASS INDICATION.									
3452 HEEA	406PH 53198	BELL 407			KT76	TRANSCIEVER 066106200	FAILED COCKPIT		2/5/98 HEEA0012780
TRANSPONDER DOESN'T POWER UP. PERFORMED PRELIMINARY INSPECTION. FOUND UNIT NOT RECEIVING AND IDENT LIGHT BLINKS. SWAPPED V101 CAVITY TUBE. NO HELP.									

***** DENOTES SIGNIFICANT OCCURRENCE

DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS (cont'd)

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ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
3457 HEEA	1167G 53067	BELL 407			KLX135	NAV COMM 069010290703	INOPERATIVE COCKPIT		1/26/98 HEEA0012705
GPS/NAV COMM MESSAGE BUTTON INOPERATIVE.									
6320 HEEA	612PH 53199	BELL 407				INDICATOR 407375005101	FAILED XMSN OIL TEMP	62	2/2/98 HEEA0012753
NO INDICATION ON PRESSURE SIDE.									
6510 VE3D	58236 53069	BELL 407				DISK PACK 406040340101	CORRODED T/R DRIVE	473	12/2/97 98ZZZX623
INSPECTING HELICOPTER PER AD 97-22-15, FOUND TWO T/R DRIVE DISC PACKS BEYOND DAMAGE LIMIT. DAMAGE WAS DUE TO CORROSION. REPLACED DAMAGED PARTS.									
7331 HEEA	141MA 53016	BELL 407				SIGNAL COND 407375016101	MALFUNCTION FUEL FLOW	1205	2/2/98 HEEA0012752
FUEL LOW LIGHT ON WITH 600 POUNDS OF FUEL.									
7712 HEEA	406PH 53198	BELL 407				INDICATOR 407375003107	FAILED ENG TORQUE	68	2/2/98 HEEA0012754
TORQUE INDICATOR WILL NOT COMPLETE SELF TEST. BAR GRAPH STARTS HALFWAY UP.									
7810 HEEA	417PH 53038	BELL 407				EXHAUST STACK 407063001101	CRACKED ENGINE		2/2/98 HEEA0012750
ENGINE EXHAUST STACK IS CRACKED.									
7810 HEEA	427PH 53059	BELL 407				EXHAUST STACK 407063001101	CRACKED ENGINE		2/2/98 HEEA0012751
ENGINE EXHAUST STACK IS CRACKED.									
7931 HEEA	57416 53070	BELL 407				INDICATOR 407375004101	FLUCTUATES ENG OIL PRESS	1198	2/2/98 HEEA0012755
ENG OIL PRESSURE FLUCTUATES BETWEEN 0 AND 150 IN FLIGHT.									
2312 HEEA	5759N 33002	BELL 412			KTR905	TRANSCEIVER 064100900	FAILED COCKPIT		2/5/98 HEEA0012770
TRANSCEIVER WILL NOT TRANSMIT. FOUND UNIT NOT RECEIVING. FOUND V20 NOT WORKING. REPLACED Q209, Q208, Q203, Q204, AND Q221 TRANSISTORS, CR209 DIODE, I216 AND I217 J.C. STILL NO TRANSMIT OR RECEIVE.									
2370 HEEA	2261D 33076	BELL 412				CVR 9806020023	FAILED COCKPIT	327	2/5/98 HEEA0012776
TEST LIGHT REMAINS ON ALL THE TIME. TIME SINCE REPAIR 0:00.									
6210 HEEA	3893S 33022	BELL 412				BLADE 412015300109	DAMAGED M/R	5120	2/5/98 HEEA0012779
PIECE OF INBOARD ABRASION STRIP MISSING ON THE TOP OUTBOARD END OF M.R BLADE.									
6210 HEEA	2298Z 33077	BELL 412				BLADE 412015300109	ERRODED M/R	10983	2/5/98 HEEA0012778
M/R BLADE OUTBOARD LEADING EDGE STRIP WITH EROSION HOLES THROUGH THE STRIP.									

***** DENOTES SIGNIFICANT OCCURRENCE

DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS (cont'd)

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6210 HEEA	2298Z 33077	BELL 412				BLADE 412015300109	DAMAGED M/R	10670	2/5/98 HEEA0012777
HOLES IN THE M/R BLADE OUTBOARD LEADING EDGE ABRASION STRIP.									
6320 HEEA	2149S 36002	BELL 412			412040002113	BEARING 205040245001	CORRODED TRANSMISSION		2/5/98 HEEA0012763
BEARINGS CORRODED. BEARING CAGE RUBBING AND TIGHTING UP ON INNER RACE. REPLACED WITH SERVICEABLE BEARING SET.									
7120 HEEA		BELL 412				BEARING ROD END 209062105001	WORN ENG MOUNT		1/27/98 HEEA0012738
ROD END HAS TOO MUCH PLAY ON NEW BEARING.									
7310 HEEA	3893P 33012	BELL 412	PWA PT6T3B			CARTRIDGE 2C273	LEAKING ENG FUEL		2/5/98 HEEA0012784
FOUND PLUG ON OUTSIDE END OF CARTRIDGE TO BE LEAKING FUEL. FOUND ADAPTER THAT HOLDS PLUG HAS EXCESSIVE PLAY.									
6320 HEEA	4573B S673	BOLKMS BO105S			4638001004	SUN GEAR 4638304001	SPALLED TRANSMISSION		2/5/98 HEEA0012764
FOUND SPALLING ON SUN GEAR TEETH. REPLACED WITH SERVICEABLE PART.									
6320 HEEA	4573B S673	BOLKMS BO105S			4638001004	BEVEL GEAR 4638303001	SPALLED TRANSMISSION		2/5/98 HEEA0012765
FOUND SPALLING ON BEVEL GEAR TEETH. REPLACED WITH SERVICEABLE PART.									
7230 R7MA	202LF 2014	BOLKMS BO105LSA3	ALLSN 250C28			GEARSHAFT 23056634	WORN SPUR ADAPTER	647	11/22/97 98ZZZX508
SPUR ADAPTER GEARSHAFT HAD EXCESSIVE SPLINE WEAR. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
7250 HEEA	5421E S806	BOLKMS BO105S			6898735	PT SUPPORT 6898730	DEFECTIVE ENGINE		2/3/98 HEEA0012758
TURBINE REMOVED DUE TO CYCLES. UPON INSPECTION OF TURBINE PARTS NOTED: MEASURED .003 OVER SPECS (1.764-1.761) ON PT SUPPORT NR6 DAMPER GROOVE AND CHROME FLAKING FROM NR7 DAMPER GROOVE.									
7313 HEEA	5421E S806	BOLKMS BO105S			6898735	NOZZLE 6879867	CRACKED NR 3		2/3/98 HEEA0012757
TURBINE REMOVED DUE TO CYCLES. UPON INSPECTION OF TURBINE PARTS NOTED: CRACKED BEYOND SERVICEABLE LIMITS ON NR3 NOZZLE FORWARD FLANGE AND AREAS MARKED. INSTALLED A STANDARD AERO OVERHAULED NOZZLE.									
7930 HEEA	4302G S853	BOLKMS BO105S			174000103	INDICATOR 174035201	FAILED ENG OIL		2/5/98 HEEA0012774
INOPERATIVE-DOES NOT WORK. INDICATOR WAS REMOVED FROM BOWL AND CLEANED. INSTALLED INDICATOR BACK ON BOWL, TESTED AND INDICATOR STILL DIDN'T WORK.									
2211 R7MA	7060G 7173	BOLKMS BK117B1				COMPUTER 117884141	FAILED YAW CSAS	25	12/1/97 98ZZZX649
FAILED VALVE CURRENT TEST PER BK117B1 MM CHAPTER 709. REPLACED YAW/CSAS COMPUTER WITH NEW UNIT, CORRECTED PROBLEM.									
2211 R7MA	7060G 7173	BOLKMS BK117B1				COMPUTER 117884141	MALFUNCTIONED YAW CSAS	61	12/26/97 98ZZZX650
AIRCRAFT EXPERIENCED OSCILLATIONS DURING FLIGHT. REPLACED YAW/CSAS COMPUTER WITH NEW UNIT, CORRECTED PROBLEM.									

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DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS (cont'd)

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2211	7060G	BOLKMS				COMPUTER	FAILED	1	12/1/97
R7MA	7173	BK117B1				117884141	YAW CSAS		98ZZZX648
YAW/CSAS COMPUTER CAUSES OSCILLATIONS DURING FLIGHT. FAILED JUST AFTER INSTALL. TIME SINCE REPAIR IS .5 HR. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
3431	136AE	BOLKMS				RECEIVER	FAILED		2/5/98
HEEA	7234	BK117B2			KX165	069102525	COCKPIT		HEEA0012772
LOC RECEIVER NOT PULLING FLAG.									
3452	911NC	BOLKMS				TRANSPONDER	FAILED		2/5/98
HEEA	7026	BK117A3				066107100	COCKPIT		HEEA0012773
TRANSPONDER HAS NO OUTPUT.									
3454	7040U	BOLKMS				INDICATOR	FAILED		1/26/98
HEEA	7180	BK117A3				066308105	COCKPIT NAV		HEEA0012690
COMPASS FLAG STAYS IN VIEW.									
3457	217UC	BOLKMS				GPS	FAILED		2/5/98
HEEA	7152	BK117B1			GPS165	0110010600	COCKPIT		HEEA0012775
GPS WILL NOT CHARGE GPS BATTERY.									
6410	71703	BOLKMS				BLADE	DEFECTIVE	3887	12/15/97
R7MA	7227	BK117B1				11731742	T/R	93	98ZZZX510
T/R BLADE PAINT PEELING CAUSING OUT OF BALANCE CONDITION. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
6410	71703	BOLKMS				BLADE	DEFECTIVE	1777	12/15/97
R7MA	7227	BK117B1				11731742	T/R	93	98ZZZX509
T/R BLADE PAINT PEELING CAUSING OUT-OF-BALANCE CONDITION. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
7310	117LG	BOLKMS	LYC			MANIFOLD	LEAKS		5/9/93
RMXA	S7032	BK117A1	LTS101650B1			43012861	ENGINE FUEL		98ZZZX598
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310	4493X	BOLKMS	LYC			MANIFOLD	LEAKS	142	12/16/98
RMXA	S7038	BK117A3	LTS101650B1			43013761	ENGINE FUEL		98ZZZX582
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310	117CH	BOLKMS	LYC			MANIFOLD	LEAKS	29	1/12/96
RMXA	S7061	BK117A3	LTS101650B1			430137601	ENGINE FUEL		98ZZZX587
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310	1140H	BOLKMS	LYC			MANIFOLD	LEAKS	1085	6/16/95
RMXA	S7078	BK117A3	LTS101650B1			430137601	ENGINE FUEL		98ZZZX590
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									

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DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS (cont'd)

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7310 RMXA	1140H S7078	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 43013761	LEAKS ENGINE FUEL	813	6/27/95 98ZZZX589
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 R7MA	911MZ S7098	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 430123604	LEAKS ENGINE FUEL	588	12/2/96 98ZZZX583
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 R7MA	911MZ S7098	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 43012364	LEAKS ENGINE FUEL		9/13/97 98ZZZX570
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	911MZ S7098	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 43013761	LEAKS ENGINE FUEL	350	10/7/97 98ZZZX569
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	527MB S7103	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 430123601	LEAKS ENGINE FUEL	175	9/25/93 98ZZZX595
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	527MB S7103	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 43013761	LEAKS ENGINE FUEL	467	5/23/93 98ZZZX597
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117MH S7112	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 430128601	LEAKS ENGINE FUEL	279	1/21/93 98ZZZX593
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117LS S7113	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 430123604	LEAKS ENGINE FUEL	688	2/5/97 98ZZZX579
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									

***** DENOTES SIGNIFICANT OCCURRENCE

DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS (cont'd)

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7310 RMXA	117LF S7013	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 43012861	LEAKS ENGINE FUEL		7/13/97 98ZZZX572
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117M S7023	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 43012364	LEAKS ENGINE FUEL	442	7/30/97 98ZZZX571
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117M S7023	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430123604	LEAKS ENGINE FUEL	16	1/23/97 98ZZZX581
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117M S7023	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430123604	LEAKS ENGINE FUEL		1/23/97 98ZZZX580
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	8765J S7054	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 43012364	LEAKS ENGINE FUEL		7/5/97 98ZZZX575
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	8765J S7054	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 43013761	LEAKS ENGINE FUEL		1/1/98 98ZZZX568
***** SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	8765J S7054	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 43012364	LEAKS ENGINE FUEL	48	7/22/97 98ZZZX574
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	8765J S7054	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 43012361	LEAKS ENGINE FUEL	22	7/31/97 98ZZZX573
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									

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DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS (cont'd)

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7310 RMXA	711FC S7070	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430128601	LEAKS ENGINE FUEL	243	5/29/93 98ZZZX596
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 R7MA	711FC S7070	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430137601	LEAKS ENGINE FUEL	79	6/15/97 98ZZZX576
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117NG S7083	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430137601	LEAKS ENGINE FUEL		10/15/93 98ZZZX594
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117NG S7083	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430123604	LEAKS ENGINE FUEL	184	2/28/96 98ZZZX586
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 R7MA	313LF S7138	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430128601	LEAKS ENGINE FUEL	584	5/17/97 98ZZZX577
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	313LF S7138	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430128602	LEAKS ENGINE FUEL	440	7/23/94 98ZZZX592
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	213AE 7219	BOLKMS BK117B1	LYC LTS101650B1			MANIFOLD 430137601	LEAKS ENGINE FUEL		9/13/97 98ZZZX591
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117LU S7144	BOLKMS BK117B1	LYC LTS101650B1			MANIFOLD 430128601	LEAKS ENGINE FUEL	186	5/6/96 98ZZZX599
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									

DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS (cont'd)

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7310 RMXA	170MC S7217	BOLKMS BK117B1	LYC LTS101650B1			MANIFOLD 430137601	LEAKS ENGINE FUEL	821	4/28/96 98ZZZX584
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 HEEA	134AE 7237	BOLKMS BK117B2	LYC LTS101750B1			FUEL NOZZLE 430137601	LEAK ENGINE		2/5/98 HEEA0012769
FUEL LEAK FROM TUBE BETWEEN TWO NOZZLES. FUEL LEAKS OUT ALONG BRAZE AT NOZZLE.									
7311 HEEA	136AE 7234	BOLKMS BK117B2	LYC LTS101650B1			PRE COOLER 1940683	CRACKED FUEL/OIL		1/26/98 HEEA0012704
PRE COOLER HAS CRACKS IN STEEL TUBE. REPLACED WITH SERVICEABLE PART.									
2562 TI1R	317MC 7505	BOLKMS BK117C1			ELT10	BATTERY 4520114	DISCHARGED ELT		11/21/97 98ZZZX600
ELT BATTERY MAX ALLOWABLE DISCHARGE LIMITS REACHED. REMOVED AND REPLACED.									
3160 R7MA	901CF 90000012	DOUG MD900				DISPLAY SYSTEM 900A3720002107	MALFUNCTIONED COCKPIT	358	8/8/97 98ZZZX661
INTEGRATED INST DISPLAY SYSTEM TRACKING OF ENGINE TIME INCORRECT. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
5320 R7MA	901CF 90000012	DOUG MD900				SUPPORT ASSY 900FF337012101	CRACKED LT INLET	106	1/18/98 98ZZZX654
LT INLET SUPPORT ASSY CRACKED BEYOND SERVICEABLE LIMITS. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
5320 R7MA	901CF 90000012	DOUG MD900				SUPPORT ASSY 900FF337012102	CRACKED RT INLET	106	1/18/98 98ZZZX653
RT INLET SUPPORT ASSY CRACKED BEYOND SERVICEABLE LIMITS. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
6230 R7MA	901CF 90000012	DOUG MD900				LINK ASSY 900C2010183107	WORN M/R	254	12/30/97 98ZZZX667
DRIVE SCISSORS LINK ASSY HAS EXCESSIVE PLAY (.105 INCH) CAUSING AIRFRAME VIBRATION. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
6230 R7MA	901CF 90000012	DOUG MD900				LINK ASSY 900C2010183107	WORN M/R	988	7/31/97 98ZZZX663
DRIVE SCISSORS LINK ASSY HAS EXCESSIVE PLAY (.128 INCH). REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
6300 R7MA	901CF 90000012	DOUG MD900				SENSOR 8866	FAILED M/R	106	1/18/98 98ZZZX651
VIBRATION SENSOR UNIT REPEATEDLY TRIGGERS BMS FAULT 4 ON CHANNEL 2. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
6310 R7MA	901CF 90000012	DOUG MD900				INPUT PINION 900D1400528101	LEAKING M/R DRIVE	333	8/5/97 98ZZZX662
INPUT PINION LEAKING BEYOND SERVICEABLE LIMITS. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
6310 R7MA	901CF 90000012	DOUG MD900				INPUT PINION 900D1400528101	DAMAGED M/R DRIVE	150	8/5/97 98ZZZX665
RECEIVED INPUT PINION FROM MCDONNELL DOUGLAS TO REPLACE LEAKER. ON THE NEW UNIT, FOUND THE DRAIN TUBE WAS BENT. WHILE TRYING TO STRAIGHTEN THE TUBE, IT BROKE OFF. THE TUBE WAS BONDED BACK ON AND THEN ONE ATTACH EAR WAS FOUND BENT.									

***** DENOTES SIGNIFICANT OCCURRENCE

DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS (cont'd)

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6310 R7MA	901CF 90000012	DOUG MD900				INPUT PINION 900D1400528101	LEAKING M/R DRIVE	593	1/18/98 98ZZZX657
INPUT PINION ASSY LEAKING OIL BEYOND SERVICEABLE LIMITS. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
6320 R7MA	901CF 90000012	DOUG MD900				HOSE 900D3409526105	LEAKING M/R GEARBOX	697	11/28/97 98ZZZX666
OIL HOSE LEAKING BEYOND SERVICEABLE LIMITS. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
6710 R7MA	901CF 90000012	DOUG MD900				PITCH LINK 900C2010214101	WORN M/R CONTROL	598	8/28/97 98ZZZX660
PITCH LINK ASSY HAS EXCESSIVE PLAY. REPLACED WITH 5 EACH NEW UNITS, CORRECTED PROBLEM.									
6720 R7MA	901CF 90000012	DOUG MD900				BEARING RACE 900F2421545105	WORN NOTAR THRUSTER	1684	8/28/97 98ZZZX658
THRUSTER BEARING RACE WORN BEYOND SERVICEABLE LIMITS. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
6720 R7MA	901CF 90000012	DOUG MD900				BLADE 900R2442012103	ERODED NOTAR FAN	1684	8/28/97 98ZZZX659
NOTAR FAN BLADE ASSY HAS EXCESSIVE EROSION. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
6720 R7MA	901CF 90000012	DOUG MD900				BEARING CEKP3AR112	WORN T/R	598	8/28/97 98ZZZX664
CONTROL BEARING WORN BEYOND SERVICEABLE LIMITS. REPLACED WITH 2 EACH NEW UNITS, CORRECTED PROBLEM.									
6720 R7MA	901CF 90000012	DOUG MD900				BLADE 900R2442012103	ERODED NOTAR FAN	1684	8/28/97 98ZZZX669
NOTAR FAN BLADE ASSY HAS EXCESSIVE EROSION. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
6720 R7MA	901CF 90000012	DOUG MD900				ACTUATOR 900CF330001101	FAILED INLET DOOR	106	1/18/98 98ZZZX652
INLET DOOR LINEAR ACTUATOR UNIT INOPERATIVE. WILL NOT ACTUATE. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
7920 R7MA	901CF 90000012	DOUG MD900				HOSE 900P3650000105	LEAKING LT ENG OIL	1878	1/20/98 98ZZZX668
LT ENGINE OIL HOSE LEAKING BEYOND SERVICEABLE LIMITS. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
7920 R7MA	901CF 90000012	DOUG MD900				HOSE 900P3650000105	LEAKING LT ENG OIL	1878	1/18/98 98ZZZX655
LT ENGINE OIL HOSE LEAKING BEYOND SERVICEABLE LIMITS. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
7323 LS1R	1097J 900801D	HUGHES 369D	ALLSN 250C20B			GOVERNOR 23057870	MALFUNCTION ENGINE PT		1/16/98 98ZZZX500
GOVERNOR DROOPS EXCESSIVELY WHEN POWER IS APPLIED AND IS SLOW TO RESPOND.									
7412 LS1R	1097J 900801D	HUGHES 369D	ALLSN 250C20B			EXCITER 49522	FAILED ENGINE IGNITER		1/19/98 98ZZZX506
IGNITION EXCITER HAD INTERNAL FAILURE, WOULD NOT EXCITE. SENT FOR REPAIR.									

***** DENOTES SIGNIFICANT OCCURRENCE

DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS (cont'd)

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2432 HEEA	911MJ 760231	SKRSKY S76A				BATTERY 30126002S	FAILED DC SYS		2/5/98 HEEA0012766
BATTERY OFF LIGHT CAME ON IN FLIGHT ON SHORT FINAL. FOUND BATTERY CIRCUIT BREAKER ON MASTER ELECTRICAL BOX POPPED. UNABLE TO RESET BREAKER. WHEN TEMP SENSOR CONNECTOR DISCONNECTED FROM BATTERY CIRCUIT BREAKER STAYS IN. WHEN TEMP SENSOR CONNECTOR CONNECTED TO BATTERY CIRCUIT BREAKER POPS. SECOND OCCURRENCE ON THIS S/N BATTERY. (SAME PROBLEM ON 11-20-97) REPLACED BATTERY WITH A SERVICEABLE BATTERY.									
3444 HEEA	5426U 760167	SKRSKY S76A			KRA405	ALTIMETER 066104800	FAILED COCKPIT		2/5/98 HEEA0012785
RADAR ALTIMETER NEEDLE FLUCTUATING AND WILL NOT SELF TEST PROPERLY.									
3454 HEEA	22342 760096	SKRSKY S76A				NAV CONTROL 071121627	FAILED COCKPIT		2/5/98 HEEA0012786
NAV CONTROL UNIT CAUSES NO DISPLAY ON KTS143 TEST BOX. CDI NEEDLE WILL NOT MOVE ON HSI.									
6210 HEEA	1545X 760050	SKRSKY S76A				BLADE 7615009100042A	SEPARATION M/R	12229	2/5/98 HEEA0012783
M/R BLADE FIBERGLASS SEPARATED UNDERNEATH THE SPLICE TITANIUM AT STATION 112.5 ON BOTH SURFACES. THE TRIM TAB HAS SOME SEPARATION ALSO.									
6210 HEEA	5128 760181	SKRSKY S76A				TIP CAP 7615009043050	DAMAGED M/R		2/5/98 HEEA0012768
BLADE END CAP OF TIP CAP IS DAMAGED.									
6210 HEEA	31219 760230	SKRSKY S76A				BLADE 7615009100051A	DEFECTIVE M/R	9890	2/5/98 HEEA0012782
BLADE TRIM TAB SPLIT OPEN AND SEPARATED.									
6210 HEEA	31219 760230	SKRSKY S76A				BLADE 7615009100048A	UNBONDED M/R	10457	2/5/98 HEEA0012781
M/R BLADE TIP RIB UNBONDED.									
6310 HEEA	60951 2771	SNIAS AS350B2				PIN 350A35106920	WORN GIMBLE JOINT	4954	2/5/98 HEEA0012761
GIMBLE JOINT PIN WORN. SCRAPPED AT PHI.									
6520 HCMA	992BH 2889	SNIAS AS350B2				LAMIFICATION 350A33215300	TORN REAR ROTOR	71	11/19/96 HAIHCMA0070
REAR ROTOR LAMIFICATIONS ARE TORN BEYOND LIMITS.									

(End of DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS)

DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - ENGINES**2/8/98 - 2/14/98 ISSUE: 98-07 ZAC-327**

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
8520	120VT 0222	AMTR MINI500	ROTAX ROTAX582			ENGINE	SEIZED CRANKSHAFT		1/16/98 98ZZZX486
*****	ENGINE SEIZED IN-FLIGHT. SERVICE CENTER THAT REPAIRED ENGINE SAID COUNTERWEIGHT CAME OFF REAR OF CRANKSHAFT. SERVICE CENTER ALSO SAID THEY BELIEVE THAT COUNTEWEIGHT CAME OFF DUE TO THE WAY REVOLUTION INSTALLS BEARING ON END OF CLUTCH. IT IS HELD STATIONARY WHICH DOES NOT ALLOW END OF CRANKSHAFT TO WOBBLE WHEN IT IS NOT EXACTLY TURNING TRUE. SUBMITTER HAD TO DO AUTOROTATION, NO DAMAGE.								
8530	191WE TE1059	BEECH E55	CONT IO520C			PISTON PIN SA630046	BROKEN NR 3 CYLINDER		11/14/97 98ZZZX520
	ENGINE DISASSEMBLED FOR OVERHAUL. UPON NR 3 CYLINDER REMOVAL, PISTON PIN PN SA630046 FOUND BROKEN. NO OTHER DAMAGE NOTED.								
7320 KCQA	499CZ U81	BEECH 99A	PWA PT6A27			ROD END 3008787	DEFECTIVE CAM BOX TO FCU		1/13/98 98ZZZX534
*****	ENGINE POWER WOULD NOT DECREASE DUE TO TIGHT ROD END CONNECTOR FROM CAM BOX TO FCU DEFECTIVE. TAT: 30,824 HOURS. ENGINE TSN: 4,295 HOURS. ENGINE TSO: 1,129 HOURS.								
7250 HEEA	129MR 51129	BELL 206L3	ALLSN 250C30P		23035128	SUPPORT 23034775	DAMAGED ENG GAS PROD		2/3/98 HEEA0012759
	RECEIVING INSPECTION REVEALED: DAMAGED ON GP SUPPORT AFT FLANGE. INSTALLED A DALLAS AIRMOTIVE OVERHAULED GP SUPPORT.								
7314 HEEA	5742N 45477	BELL 206L1				FUEL PUMP 3881005	WORN ENGINE	14063	2/5/98 HEEA0012767
	FUEL PUMP EXCESSIVELY WORN INTERNAL SPLINES.								
7310 RMXA	6992 47521	BELL 222U	LYC LTS101750C1			MANIFOLD 430137601	LEAKS ENGINE FUEL		4/1/96 98ZZZX585
	SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.								
7310 RMXA	6992 47521	BELL 222U	LYC LTS101750C1			MANIFOLD 430123604	LEAKS ENGINE FUEL		5/11/97 98ZZZX578
	SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.								
7310 RMXA	6992 47521	BELL 222U	LYC LTS101750C1			MANIFOLD 430128601	LEAKS ENGINE FUEL		11/14/95 98ZZZX588
	SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.								
7261 HEEA	230UN 23009	BELL 230				FILTER 174250008	DEFECTIVE ENG OIL		2/2/98 HEEA0012756
	ENG OIL FILTER NO BYPASS INDICATION.								
7310 HEEA	3893P 33012	BELL 412	PWA PT6T3B			CARTRIDGE 2C273	LEAKING ENG FUEL		2/5/98 HEEA0012784
	FOUND PLUG ON OUTSIDE END OF CARTRIDGE TO BE LEAKING FUEL. FOUND ADAPTER THAT HOLDS PLUG HAS EXCESSIVE PLAY.								

***** DENOTES SIGNIFICANT OCCURRENCE

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7230 R7MA	202LF 2014	BOLKMS BO105LSA3	ALLSN 250C28			GEARSHAFT 23056634	WORN SPUR ADAPTER	647	11/22/97 98ZZZX508
SPUR ADAPTER GEARSHAFT HAD EXCESSIVE SPLINE WEAR. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
7250 HEEA	5421E S806	BOLKMS BO105S			6898735	PT SUPPORT 6898730	DEFECTIVE ENGINE		2/3/98 HEEA0012758
TURBINE REMOVED DUE TO CYCLES. UPON INSPECTION OF TURBINE PARTS NOTED: MEASURED .003 OVER SPECS (1.764-1.761) ON PT SUPPORT NR6 DAMPER GROOVE AND CHROME FLAKING FROM NR7 DAMPER GROOVE.									
7313 HEEA	5421E S806	BOLKMS BO105S			6898735	NOZZLE 6879867	CRACKED NR 3		2/3/98 HEEA0012757
TURBINE REMOVED DUE TO CYCLES. UPON INSPECTION OF TURBINE PARTS NOTED: CRACKED BEYOND SERVICEABLE LIMITS ON NR3 NOZZLE FORWARD FLANGE AND AREAS MARKED. INSTALLED A STANDARD AERO OVERHAULED NOZZLE.									
7310 RMAXA	117LG S7032	BOLKMS BK117A1	LYC LTS101650B1			MANIFOLD 43012861	LEAKS ENGINE FUEL		5/9/93 98ZZZX598
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMAXA	4493X S7038	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 43013761	LEAKS ENGINE FUEL	142	12/16/98 98ZZZX582
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMAXA	117CH S7061	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 430137601	LEAKS ENGINE FUEL	29	1/12/96 98ZZZX587
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMAXA	1140H S7078	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 430137601	LEAKS ENGINE FUEL	1085	6/16/95 98ZZZX590
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMAXA	1140H S7078	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 43013761	LEAKS ENGINE FUEL	813	6/27/95 98ZZZX589
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 R7MA	911MZ S7098	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 430123604	LEAKS ENGINE FUEL	588	12/2/96 98ZZZX583
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									

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7310 RMXA	911MZ S7098	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 43013761	LEAKS ENGINE FUEL	350	10/7/97 98ZZZX569
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 R7MA	911MZ S7098	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 43012364	LEAKS ENGINE FUEL		9/13/97 98ZZZX570
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	527MB S7103	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 43013761	LEAKS ENGINE FUEL	467	5/23/93 98ZZZX597
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	527MB S7103	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 430123601	LEAKS ENGINE FUEL	175	9/25/93 98ZZZX595
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117MH S7112	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 430128601	LEAKS ENGINE FUEL	279	1/21/93 98ZZZX593
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117LS S7113	BOLKMS BK117A3	LYC LTS101650B1			MANIFOLD 430123604	LEAKS ENGINE FUEL	688	2/5/97 98ZZZX579
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117LF S7013	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 43012861	LEAKS ENGINE FUEL		7/13/97 98ZZZX572
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117M S7023	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430123604	LEAKS ENGINE FUEL	16	1/23/97 98ZZZX581
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									

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7310 RMXA	117M S7023	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 43012364	LEAKS ENGINE FUEL	442	7/30/97 98ZZZX571
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117M S7023	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430123604	LEAKS ENGINE FUEL		1/23/97 98ZZZX580
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	8765J S7054	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 43013761	LEAKS ENGINE FUEL		1/1/98 98ZZZX568
***** SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	8765J S7054	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 43012364	LEAKS ENGINE FUEL		7/5/97 98ZZZX575
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	8765J S7054	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 43012364	LEAKS ENGINE FUEL	48	7/22/97 98ZZZX574
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	8765J S7054	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 43012361	LEAKS ENGINE FUEL	22	7/31/97 98ZZZX573
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 R7MA	711FC S7070	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430137601	LEAKS ENGINE FUEL	79	6/15/97 98ZZZX576
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	711FC S7070	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430128601	LEAKS ENGINE FUEL	243	5/29/93 98ZZZX596
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									

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7310 RMXA	117NG S7083	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430137601	LEAKS ENGINE FUEL		10/15/93 98ZZZX594
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117NG S7083	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430123604	LEAKS ENGINE FUEL	184	2/28/96 98ZZZX586
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 R7MA	313LF S7138	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430128601	LEAKS ENGINE FUEL	584	5/17/97 98ZZZX577
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	313LF S7138	BOLKMS BK117A4	LYC LTS101650B1			MANIFOLD 430128602	LEAKS ENGINE FUEL	440	7/23/94 98ZZZX592
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	213AE 7219	BOLKMS BK117B1	LYC LTS101650B1			MANIFOLD 430137601	LEAKS ENGINE FUEL		9/13/97 98ZZZX591
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	117LU S7144	BOLKMS BK117B1	LYC LTS101650B1			MANIFOLD 430128601	LEAKS ENGINE FUEL	186	5/6/96 98ZZZX599
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 RMXA	170MC S7217	BOLKMS BK117B1	LYC LTS101650B1			MANIFOLD 430137601	LEAKS ENGINE FUEL	821	4/28/96 98ZZZX584
SUBMITTER STATES EXCESSIVE FUEL MANIFOLD LEAKS OVER THE LAST 18 MONTHS. ALLIED SIGNAL IS IN THE PROCESS OF RELEASING AN ASB LIMITING THE LIFE OF THE FUEL MANIFOLD TUBES. OTHER OPERATORS SUBMITTER CONTACTED ARE HAVING THE SAME PROBLEMS. OMNIFLIGHT HAS GONE TO A POST-FLIGHT CHECK AND A SHIFT-CHANGE CHECK OF THIS MANIFOLD.									
7310 HEEA	134AE 7237	BOLKMS BK117B2	LYC LTS101750B1			FUEL NOZZLE 430137601	LEAK ENGINE		2/5/98 HEEA0012769
FUEL LEAK FROM TUBE BETWEEN TWO NOZZLES. FUEL LEAKS OUT ALONG BRAZE AT NOZZLE.									
7311 HEEA	136AE 7234	BOLKMS BK117B2	LYC LTS101650B1			PRE COOLER 1940683	CRACKED FUEL/OIL		1/26/98 HEEA0012704
PRE COOLER HAS CRACKS IN STEEL TUBE. REPLACED WITH SERVICEABLE PART.									

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7414 NG2R	6913E 56413	CESSNA 175A	LYC O360A1A		BENDIX S4LN21	IMPULSE COUPLING 1059474	WORN LT MAGNETO	9	1/23/98 98ZZZX528
PILOT FOUND 250 RPM MAG DROP, LT MAG. TROUBLESHOT IGNITION SYSTEM. REMOVED MAG AND FOUND EXCESS PLAY IN IMPULSE COUPLING AND MAG DRIVE. SENT OUT FOR REPAIR, SPRING WAS BROKEN. SUSPECT IMPROPER INSTALLATION OR DEFECTIVE METALLURGY PRIOR TO INSTALLATION.									
8530 VA1R	36989 414A0503	CESSNA 414A	CONT TSIO520NB			CYLINDER 65345	SEPARATION BARREL JOINT	1/30/98 160	98ZZZX505
CYLINDER REMOVED DUE TO HEAD SEPARATION FROM THE CLYINDER BARREL. SUBMITTER NOTES THE CYLINDER WAS RE-MANUFACTURED IN JANUARY, 1994 (HEAD STAMP 1-94 AND THE OEM NUMBER IS OF A LATER DESIGN THAN CLYINDER P/N DESCRIBED IN SB M86-7 AND AD 86-13-04R3 RELATING TO CERTAIN OEM CYLINDERS). SUBMITTER NOTES CYLINDER WALLS HAD BEEN RECONDITIONED BY CHROME-PLATING AND NEW HEAD PARTS HAD BEEN INSTALLED AT THIS TIME OF RECONDITIONING. SUBMITTER SUGGESTS POSSIBILITY OF AN UNDETECTED CYLINDER HEAD CRACK BETWEEN CYLINDER FINS PROGRESSED TO SEPARATION AFTER PROLONGED HEAT AND CYCLE.									
8530 VA1R	297DB 421C0826	CESSNA 421C	CONT GTSIO520L			VALVE 652956	WORN CYL 1-2-6	101	1/30/98 98ZZZX503
CYLINDERS REMOVED FROM THE ENGINE DUE TO INCREASED OIL CONSUMPTION REPORTS. UPON REMOVAL, AN EXCESSIVE AMOUNT OF ROCKER ARM TO VALVE CLEARANCE WAS NOTICED ON THE NR 1, NR 2, AND NR 6 CYLINDERS. CLOSER EXAMINATION REVEALED TIPS OF THE EXHAUST VALVES HAD EXTREME WEAR. WHEN COMPARED TO A NEW VALVE, WEAR AS MUCH AS .081 INCH ON ONE OF THE TIPS AND APPROXIMATELY .090 INCH AND .095 INCH ON THE OTHER TWO VALVES. CONSTRUCTION OF THE VALVES INVOLVES A PROCESS WHERE A HARDENED TIP IS FRICTION WELDED TO THE VALVE STEM. SUBMITTER BELIEVES THE HARDENED TIP SEPARATED FROM THE VALVE STEM DURING SERVICE.									
8520 HXUA	23KM 143153	GULSTM 500B	LYC IO540B1A5			STUD 66734	FAILED NR 5 CYLINDER	1/14/98 250	98ZZZX554
NR 5 CYLINDER THROUGH-STUD BROKE CAUSING STUDS 56-15 TO BREAK. CYLINDER BECAME LOOSE. ENGINE RAN ROUGH. ENGINE SHUT DOWN AND SAFE LANDING MADE. SUBMITTER SUGGESTED A POSSIBLE CAUSE AS OVERTORQUE OF CYLINDER HOLD-DOWN STUDS.									
7323 LS1R	1097J 900801D	HUGHES 369D	ALLSN 250C20B			GOVERNOR 23057870	MALFUNCTION ENGINE PT	1/16/98 287	98ZZZX500
GOVERNOR DROOPS EXCESSIVELY WHEN POWER IS APPLIED AND IS SLOW TO RESPOND.									
7412 LS1R	1097J 900801D	HUGHES 369D	ALLSN 250C20B			EXCITER 49522	FAILED ENGINE IGNITER	1/19/98 98ZZZX506	
IGNITION EXCITER HAD INTERNAL FAILURE, WOULD NOT EXCITE. SENT FOR REPAIR.									
8520 EKIR	6805L 31P7	PIPER PA31P	LYC TIGO541E1A			LIFTER LW15861	SPALLED NR 4 CYL EXHAUST	74	1/20/98 98ZZZX523
NR 4 CYLINDER EXHAUST LIFTER SPALLED SEVERELY CAUSING DAMAGE TO THE CAMSHAFT LOBE. ALL OTHER LIFTERS LOOKED GOOD. ENGINE WAS FACTORY OVERHAULED 7/97. FOUND METAL IN SCREEN AND FILTER LEADING TO INVESTIGATION WHICH TURNED UP THIS PROBLEM.									

(End of DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - ENGINES)

DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - COMPONENTS**2/8/98 - 2/14/98 ISSUE: 98-07 ZAC-327**

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
3444 HEEA	206LS 51070	BELL 206L3				ALTIMETER 066106103	FAILED COCKPIT		2/5/98 HEEA0012787
RADAR ALTIMETER READS 200 FEET AT ALL TIMES.									
3452 HEEA	104PH 3622	BELL 206B3			KT76	TRANSCEIVER 066106200	FAILED COCKPIT		2/5/98 HEEA0012788
TRANSPONDER INOPERATIVE.									
3452 HEEA	2124Z 45646	BELL 206L1			KT76	TRANSCEIVER 066106200	FAILED COCKPIT		2/5/98 HEEA0012762
TRANSCEIVER NO POWER. ADJUSTED CAVITY FOR GOOD POWER OUT AND ON FREQUENCY. REPLACED WEAK V301 PHOTODETECTOR. BENCH CHECK GOOD.									
3457 HEEA	6160Z 51610	BELL 206L3			GPS150	GPS 0110005400	FAILED COCKPIT		2/5/98 HEEA0012789
GPS BATTERY LOW INDICATED.									
3455 HEEA	3131S 30953	BELL 212				RECEIVER 066104701	FAILED ADF		2/5/98 HEEA0012771
ADF RECEIVER SLOW TO POINT AND LOW AUDIO.									
3452 HEEA	406PH 53198	BELL 407			KT76	TRANSCEIVER 066106200	FAILED COCKPIT		2/5/98 HEEA0012780
TRANSPONDER DOESN'T POWER UP. PERFORMED PRELIMINARY INSPECTION. FOUND UNIT NOT RECEIVING AND IDENT LIGHT BLINKS. SWAPPED V101 CAVITY TUBE. NO HELP.									
3457 HEEA	1167G 53067	BELL 407			KLX135	NAV COMM 069010290703	INOPERATIVE COCKPIT		1/26/98 HEEA0012705
GPS/NAV COMM MESSAGE BUTTON INOPERATIVE.									
2312 HEEA	5759N 33002	BELL 412			KTR905	TRANSCEIVER 064100900	FAILED COCKPIT		2/5/98 HEEA0012770
TRANSCEIVER WILL NOT TRANSMIT. FOUND UNIT NOT RECEIVING. FOUND V20 NOT WORKING. REPLACED Q209, Q208, Q203, Q204, AND Q221 TRANSISTORS, CR209 DIODE, I216 AND I217 J.C. STILL NO TRANSMIT OR RECEIVE.									
2370 HEEA	2261D 33076	BELL 412				CVR 9806020023	FAILED COCKPIT	327	2/5/98 HEEA0012776
TEST LIGHT REMAINS ON ALL THE TIME. TIME SINCE REPAIR 0:00.									
2211 R7MA	7060G 7173	BOLKMS BK117B1				COMPUTER 117884141	MALFUNCTIONED YAW CSAS	61	12/26/97 98ZZZX650
AIRCRAFT EXPERIENCED OSCILLATIONS DURING FLIGHT. REPLACED YAW/CSAS COMPUTER WITH NEW UNIT, CORRECTED PROBLEM.									
2211 R7MA	7060G 7173	BOLKMS BK117B1				COMPUTER 117884141	FAILED YAW CSAS	1	12/1/97 98ZZZX648
YAW/CSAS COMPUTER CAUSES OSCILLATIONS DURING FLIGHT. FAILED JUST AFTER INSTALL. TIME SINCE REPAIR IS .5 HR. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
2211 R7MA	7060G 7173	BOLKMS BK117B1				COMPUTER 117884141	FAILED YAW CSAS	25	12/1/97 98ZZZX649
FAILED VALVE CURRENT TEST PER BK117B1 MM CHAPTER 709. REPLACED YAW/CSAS COMPUTER WITH NEW UNIT, CORRECTED PROBLEM.									

***** DENOTES SIGNIFICANT OCCURRENCE

DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - COMPONENTS (cont'd)

2/8/98 To 2/14/98 ISSUE: 98-07 ZAC-327

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
3431 HEEA	136AE 7234	BOLKMS BK117B2			KX165	RECEIVER 069102525	FAILED COCKPIT		2/5/98 HEEA0012772
LOC RECEIVER NOT PULLING FLAG.									
3452 HEEA	911NC 7026	BOLKMS BK117A3				TRANSPONDER 066107100	FAILED COCKPIT		2/5/98 HEEA0012773
TRANSPONDER HAS NO OUTPUT.									
3454 HEEA	7040U 7180	BOLKMS BK117A3				INDICATOR 066308105	FAILED COCKPIT NAV		1/26/98 HEEA0012690
COMPASS FLAG STAYS IN VIEW.									
3457 HEEA	217UC 7152	BOLKMS BK117B1			GPS165	GPS 0110010600	FAILED COCKPIT		2/5/98 HEEA0012775
GPS WILL NOT CHARGE GPS BATTERY.									
2562 TI1R	317MC 7505	BOLKMS BK117C1			ELT10	BATTERY 4520114	DISCHARGED ELT		11/21/97 98ZZZX600
ELT BATTERY MAX ALLOWABLE DISCHARGE LIMITS REACHED. REMOVED AND REPLACED.									
3440	6204X 310R1336	CESSNA 310R				LINE 560011830	CRACKED ANTI ICE	2547	1/17/98 98ZZZX545
ALCOHOL WINDSHIELD ANTI-ICE LINE COMING OUT OF PUMP CRACKED AT 90 DEGREE BEND ON INSIDE RADIUS.									
6113 VA1R	414VA 414A0442	CESSNA 414A				BULKHEAD E6178	CRACKED PROP SPINNER	90	1/28/98 98ZZZX639
SPINNER BULKHEAD INSTALLED FOR PROPELLER MODEL 3AF36C514-C/G-80VMFA-2 FOUND CRACKED. SUBMITTER STATED FOUND THIS ON MANY OTHER AIRCRAFT. THIS SPINNER IS ONLY ON AIRCRAFT MODIFIED PER STC SA 7633SW. LIQUID COOLED ENGINE INSTALLATION.									
6113 VA1R	414VA 414A0442	CESSNA 414A				BULKHEAD E6178	CRACKED SPINNER		1/22/98 98ZZZX547
SPINNER BULKHEAD INSTALLED FOR STC SA7633SW LIQUID COOLED ENGINE INSTALLATION WITH PROPELLER MODEL 3AF36C514-C/G-80VMFA-2 FOUND CRACKED NUMEROUS TIMES ON OTHER AIRCRAFT WITH SAME MODIFICATION. APPEARS THE MACHINING OF METAL FOR BULKHEAD MATERIAL IS ROUGH CAUSING STRESS AROUND HOLES.									
3160 R7MA	901CF 90000012	DOUG MD900				DISPLAY SYSTEM 900A3720002107	MALFUNCTIONED COCKPIT	358	8/8/97 98ZZZX661
INTEGRATED INST DISPLAY SYSTEM TRACKING OF ENGINE TIME INCORRECT. REPLACED WITH NEW UNIT, CORRECTED PROBLEM.									
6113 MOGR	808RK 287415225	PIPER PA28151				BULKHEAD 35323012	CRACKED PROP SPINNER	605	1/22/98 98ZZZX621
DURING ANNUAL INSPECTION, BOTH SPINNER BULKHEADS FOUND CRACKED. FORWARD BULKHEAD SEVERELY CRACKED. CRACKS EMANATED FROM BALANCE WEIGHT INSTALLED BY PERSONS UNKNOWN. COUNTERWEIGHT SHOULD BE MOUNTED TO STARTER RING OR AFT BULKHEAD WHEN POSSIBLE. REPLACED BULKHEAD WITH NEW PART.									
3444 HEEA	5426U 760167	SKRSKY S76A			KRA405	ALTIMETER 066104800	FAILED COCKPIT		2/5/98 HEEA0012785
RADAR ALTIMETER NEEDLE FLUCTUATING AND WILL NOT SELF TEST PROPERLY.									
3454 HEEA	22342 760096	SKRSKY S76A				NAV CONTROL 071121627	FAILED COCKPIT		2/5/98 HEEA0012786
NAV CONTROL UNIT CAUSES NO DISPLAY ON KTS143 TEST BOX. CDI NEEDLE WILL NOT MOVE ON HSI.									

***** DENOTES SIGNIFICANT OCCURRENCE

ATA	REG. NO	ACFT MAKE	ENG MAKE	PROP MAKE	COMP MFG	PART NAME	PART COND	TT	DIFF. DATE
OPER	SERIAL NO	ACFT MODEL	ENG MDL	PROP MDL	COMP MDL	PART NUMBER	PART LOC.	TSO	OPER CONT NO

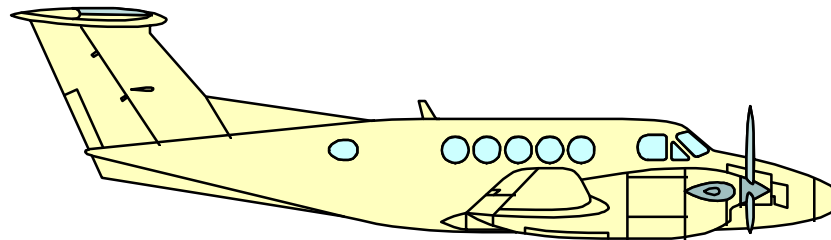
(End of DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - COMPONENTS)

DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - PROPELLERS**2/8/98 - 2/14/98 ISSUE: 98-07 ZAC-327**

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
6111	8015R MC54	BEECH A24R		MCAULY 2D34C9		BLADE S78FBM15	CORRODED THREADS	1/20/98	98ZZZX518
CORROSION FOUND BELOW THE PTICH LINE IN THE THREADS CAUSING THE BLADE TO BE UNAIRWORTHY PER MCAULEY SM NR 720415. SUBMITTER STATED ADHERING TO PROPER COMPLIANCE TIMES OF AD 91-15-04 MAY HAVE PREVENTED THIS.									
6111	8015R MC54	BEECH A24R		MCAULY 2D34C9		BLADE S78FBM15	CORRODED THREADS	1/20/98	98ZZZX517
CORROSION WAS FOUND BELOW TTE PITCH LINES OF THE BLADE THREADS CAUSING THE BLADE TO BE UNAIRWORTHY PER MCCAULEY SM NR 720415. SUBMITTER STATED ADHERING TO COMPLIANCE TIMES OF AD 91-15-04 MAY HAVE PREVENTED THIS CONDITION.									
6114	8015R MC54	BEECH A24R		MCAULY 2D34C9		HUB D6468C9	CRACKED THREADS	1/20/98	98ZZZX516
A CRACK WAS FOUND IN THE THREADS OF HUB RENDERING IT UNAIRWORTHY PER AD 91-15-04. THE DEFECT POSSIBLY COULD HAVE BEEN FOUND AT AN EARLIER DATE IF COMPLIANCE TIME OF THE AD HAD BEEN ADHERED TO.									
6114 EK2R		BEECH B35		MCAULY 2A36C23		HUB C6447C23	MISDRILLED PROPELLER	1/12/98	98ZZZX524
OIL FILLER HOLE ON SIDE OF PROPELLER HUB DRILLED IN WRONG LOCATION. REF: MCCAULEY SL 1989-5 AND SL 1995-14A.									
6114 EX2R	8835M D7353	BEECH S35		MCAULY 2A36C23		HUB C6447C23	MISDRILLED PROPELLER	1/12/98	98ZZZX511
OIL FILLER HOLE ON SIDE OF HUB DRILLED IN WRONG LOCATION. REF: MCCAULEY SL1989-5 AND SL1995-14A.									
6110		SOCATA TBM700		HARTZL HCE4N3		ROD 6071	DEFECTIVE PROP ASSY	12/1/96	EY2R9601684
PROP ASSY SN 1321 IS DEFECTIVE									
(End of DOMESTIC SERVICE DIFFICULTY REPORT SUMMARY - PROPELLERS)									



INTERNATIONAL SERVICE DIFFICULTY REPORT



INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT**2/8/98 - 2/14/98 ISSUE: 98-07 ZAC-327**

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
7540		BEECH 200BEECH	PWA PT6A42	HARTZL HCB3TN3		SWITCH 903800021	MIS INSTALLED BLEED AIR IND		12/25/97 AU971653
(AUS) LH AND RH BLEED AIR SENSE LINES TRANSPOSED. LH LINE CONNECTED TO RH SWITCH AND VICE VERSA. A HOLE IN THE RH SENSE LINE ACTIVATED THE LH BLEED AIR WARNING. SEE MDR 97/1609 FOR MORE INFORMATION.									
7540		BEECH 200BEECH	PWA PT6A42	HARTZL HCB3TN3		SWITCH 903800021	MIS WIRED BLEED AIR IND		12/15/97 AU971609
(AUS) LH BLEED AIR WARNING SWITCH PRESSURE LINE TRANSPOSED WITH RH SWITCH. RH BLEED AIR SENSE LINE CONTAINED A SMALL HOLE WHICH HAD ACTIVATED THE (INCORRECT) WARNING LIGHT. PERSONNEL/MAINTENANCE ERROR.									
7714		BEECH 200BEECH	PWA PT6A41	HARTZL HCB3TN3		TACH GENERATOR AN55443	FAILED ENGINE N1		12/18/97 AU971614
(AUS) RH ENGINE N1 TACH GENERATOR DRIVE SHAFT SHEARED									
2432		BEECH G35	CONT E2258	BEECH 215107	BEECH G35	BATTERY	CORRODED DC SYS		1/13/98 AU980015
(AUS) BATTERY CORRODED.									
2810		BEECH G35	CONT E2258	BEECH 215107		CAP	FAULTY MAIN FUEL		1/13/98 AU980013
(AUS) MAIN FUEL CAPS (2OFF) FAULTY.									
3213		BEECH G35	CONT E2258	BEECH 215107		TORQUE LINK	WORN MLG		1/13/98 AU980009
(AUS) LANDING GEAR TORQUE LINKS WORN EXCESSIVELY.									
3222		BEECH G35	CONT E2258	BEECH 215107		BUSHING	WORN NLG STRUT		1/13/98 AU980012
(AUS) NOSE LANDING GEAR STRUT ASSEMBLY BUSHES WORN EXCESSIVELY.									
3230		BEECH G35	CONT E2258	BEECH 215107	BEECH G35	BUSHING	WORN NLG RETRACT		1/13/98 AU980016
(AUS) NOSE LANDING GEAR DRAG BRACE BUSHES WORN AND ONE ATTACHMENT BOLT LOOSE.									
2810		CESSNA R182	LYC O540J3C5	MCAULY B2D34C214		FUEL SYSTEM	CONTAMINATED LT TANK		12/15/97 AU971583
(AUS) LH FUEL TANK AND FUEL SYSTEM CONTAMINATED WITH SUGAR.									
5312		CESSNA 182P				BULKHEAD	CRACKED FWD DOOR POST		1/5/98 AU980021
(AUS) FORWARD DOOR POST BULKHEAD CRACKED. FOUND DURING INSPECTION IAW AD/CESSNA180/75 AMDT1.									
7160		CESSNA R182	LYC O540J3C5	MCAULY B2D34C214		CLAMP QS200	LOOSE CARB INT		6/11/96 CA960620020
(CAN) CLAMP AT AIR BOX ASSEMBLY FOR CARBURETOR FOUND LOOSE. HOSE HAD NOT BEEN PUSHED ON PROPERLY. THIS IS NOT CORRECT CLAMP BUT IS JUST AS GOOD OR BETTER ACCORDING TO SUBMITTER. CORRECT CLAMP IS AN NAS398-66. THIS LOOSE CLAMP COULD CAUSE A LOSS OF POWER AND OBSTRUCTION OF CARBURETOR AIR INTAKE.									

INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT (cont'd)

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ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
2822		CESSNA 310R	CONT IO520M			PUMP 476411	FAULTY FUEL BOOST		12/5/97 AU971645
(AUS) FUEL TRANSFER PUMP INTERNAL ELECTRICAL FAULT. FEED THROUGH WIRE BROKEN AT SPOT WELD.									
3231		CESSNA 310Q	CONT IO470V	MCAULY D2AF34C71	CESSNA 310Q	ROD END S11044	SEIZED RT MLG DOOR		12/13/97 AU971627
(AUS) RH NOSE LANDING GEAR DOOR RETRACTION RODEND BROKEN. DOOR CAUGHT THE NOSE GEAR DURING RETRACTION AND JAMMED THE NLG HALFWAY UP. RODEND BEARING PARTIALLY SEIZED DUE TO LACK OF LUBRICATION.									
5220		CESSNA 402CESSNA		MCAULY 3AF32C87		WINDOW 50111302	FAILED EMERGENCY EXIT		12/20/97 AU971634
(AUS) EMERGENCY EXIT WINDOW FAILED AT THE TOP. AS THE WINDOW SWUNG DOWN IT TORE THROUGH THE TWO ATTACHMENT POINTS AND CAUSED MINOR DAMAGE TO THE WING SKIN.									
5540		CESSNA 402A		MCAULY 3AF32C87	513300011	BRACKET 513300032	CRACKED RUDDER HINGE		11/12/97 AU971616
(AUS) LOWER RUDDER HINGE ATTACHMENT BRACKET CRACKED. LOWER RUDDER RIB BADLY CORRODED.									
7810		CESSNA 402B	CONT TSIO520E	MCAULY 3AF32C87		EXHAUST PIPE 991030132	CRACKED ENGINE COLLECTOR		12/31/97 AU971636
(AUS) RH ENGINE INBOARD EXHAUST HEADER PIPE CRACKED UNDER CLAMP AT FLANGE JOINT.									
5320		CESSNA 404CESSNA		MCAULY 3FF32C501	CESSNA C404	WEB 521304010	CRACKED RT NOSE WELL		12/16/97 AU971608
(AUS) RH NOSE WHEEL WELL WEB CRACKED IN AREA OF NLG ATTACHMENT FORWARD TWO BOLT HOLES.									
5320		CESSNA 404CESSNA		MCAULY 3FF32C501	CESSNA C404	WEB 52130409	CRACKED LT NOSE WELL		12/16/97 AU971607
(AUS) LH NOSE WHEEL WELL WEB CRACKED IN AREA OF NLG ATTACHMENT FORWARD TWO BOLT HOLES.									
2750		CESSNA 421C		MCAULY 3FF32C501		CABLE 500000861	BROKEN TE FLAP CONTROL		6/8/97 AU971646
(AUS) FLAP CABLE SNAPPED.									
2910		CESSNA 441		HARTZL HCB3TN5		PIPE 57270021	HOLED HYD MAIN		1/13/98 AU980023
(AUS) HYDRAULIC PIPE TO FLAP SELECTOR CONTAINED PINHOLE LEAKS. LOSS OF HYDRAULIC FLUID									
7930		MAULE M7235	LYC IO540W1A5			PRESSURE SENSOR	FAILED HOBBS METER		10/9/96 CA961030003
(CAN) AIRCRAFT LOST ALL OIL IN FLIGHT DUE TO HOBBS METER PRESSURE SENSOR FAILURE.									
5512		MTSBSI MU2B30		HARTZL HCB3TN5	MTSBSI MU2B30	SKIN 528	CRACKED HORIZONTAL STAB		12/16/97 AU971630
(AUS) HORIZONTAL STABILISER LEADING EDGE SKINS CRACKED. CRACKS ORIGINATE FROM RIB RIVETS FOR THE OUTBOARD ELEVATOR HINGE. CRACK LENGTH 50.8MM (2IN). FOUND DURING INSPECTION IAW AD/MU2/35.									

***** DENOTES SIGNIFICANT OCCURRENCE

INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT (cont'd)

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5312		PARTEN P68B	LYC IO360A1B6	HARTZL HCC2YK2		BULKHEAD	CRACKED FWD FUSELAGE		11/18/97 AU971623
(AUS) FRONT BULKHEAD CRACKED THROUGH TWO BOLT HOLES. FOUND FOLLOWING REMOVAL OF THE UPPER NOSE LEG MOUNT PLATE DUE TO TOWING DAMAGE. DAMAGE CAUSED BY INCORRECT GROUND HANDLING.									
5347		PIPER PA28235	LYC O540B4B5	HARTZL HCC2YK1		SEAT TRACK 6255704	CORRODED RT OUTB SEAT		12/30/97 AU971591
(AUS) RH OUTBOARD SEAT TRACK CONTAINED EXFOLIATION CORROSION.									
5520		PIPER PA31350		HARTZL HCE3YR2	4223104	HINGE 4975802	CRACKED ELEV RT INB		1/12/98 AU980008
(AUS) ELEVATOR HINGE INBOARD RH BRACKET CRACKED IN RADIUS.									
6120		PIPER PA31	LYC TIO540A2C	HARTZL HCE3YR2A		CABLE 2489408	BROKEN LT PROP PITCH	6388	11/13/96 CA961120006
(CAN) LEFT HAND PITCH CONTROL CABLE BROKE WHILE CHECKING IT. CABLE BROKE INSIDE CASE AT BEGINNING OF THE FLEXIBLE SECTION. SUBMITTER SUSPECTS THAT PILOT TRIED TO MOVE CONTROL WHEN ENGINE WAS STILL COLD.									
7922		PIPER PA31350	LYC LTIO540J2BD	HARTZL HCE3YR2	LYC 53E22144	VALVE 53E22144	FAILED THERMO BYPASS		9/25/97 AU971648
(AUS) ENGINE OIL SYSTEM THERMAL BYPASS VALVE (VERNATHERM) RETAINING CLIP FAILED PREVENTING THE VALVE FROM CORRECT OPERATION.									
5751		PIPER PA32R301	LYC IO540K1G5	HARTZL HCC2YK1	PIPER LHAILERON	RIB 8639802	CRACKED AILERON NOSE		12/23/97 AU971624
(AUS) LH AILERON HINGE NOSE RIB CRACKED. CRACK LENGTH 40MM (1.57IN). ADDITIONAL CRACKING ALSO EVIDENT.									
3230		PIPER PA34200	LYC IO360C1E6	HARTZL HCC2YK2		MOUNT 9555123	CRACKED MLG RETRACT		12/26/97 AU971620
(AUS) NOSE LANDING GEAR MOUNT TUBE TO CENTERING CHANNEL WELD FAILED.									
5311		PIPER PA38112		SNSNCH 74DM		FRAME 7746709	CRACKED FUSELAGE		7/29/97 AU971587
(AUS) FUSELAGE REAR SPAR FRAME CRACKED IN BOTH LOWER CORNERS. FOUND DURING INSPECTION IAW AD/PA38/25.									
7120		PIPER PA44180	LYC O360E1A6			MOUNT 86212002	CRACKED LEFT ENGINE	5024	9/17/96 CA960924031
(CAN) LEFT ENGINE MOUNT FOUND CRACKED AT THE LEFT UPPER MEMBER AND THE MEMBER BETWEEN THE LEFT UPPER AND THE LEFT LOWER MOUNT. WELDING REPAIR HAD BEEN PREVIOUSLY CARRIED OUT AS HAD A MAGNETIC PARTICLE INSPECTION. NO HARD LANDING REPORTED, NOR VIBRATION FROM ENGINE. POSSIBLE MATERIAL FATIGUE. PIPER OWNER MAGAZINE HAD NOTED TWO LEFT MOUNTS CRACKED RECENTLY AND OVERHAUL AGENCY HAD ALSO REPORTED ONE.									
5741		SOCATA TB10TOBAGO	LYC O360A1A	HARTZL HCC2YK1	SOCATA TB10	BRACKET TB1011034900	CRACKED LT WING AFT		1/8/98 AU980003
(AUS) LH WING REAR ATTACHMENT BRACKET BROKEN THROUGH LOWER BOLT HOLE. SUSPECT CAUSED BY UNREPORTED HEAVY LANDING.									
3242		ZLIN Z242L			K2202007	O-RING 155N607334	FAILED RT BRAKE CALIP	879	11/29/96 CA961230005
(CAN) AFTER LANDING THE RIGHT HAND BRAKE LOCKED. THE 'O' RING ON THE BRAKE CALIPER COVER HAD FAILED.									

***** DENOTES SIGNIFICANT OCCURRENCE

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
3250		ZLIN				SPRING	BROKEN	659	10/10/96
		Z242L				Z4242170001	NOSE GEAR		CA961104010
(CAN) PILOT REPORTED THAT THE RUDDER PEDALS WERE OFFSET WHEN NOSE WHEEL WAS STRAIGHT. THE LEFT NOSE WHEEL STEERING SPRING WAS FOUND BROKEN.									

(End of INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - AIRCRAFT)

INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS**2/8/98 - 2/14/98 ISSUE: 98-07 ZAC-327**

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
7722		BELL 212	PWA PT6T3B		PWA PT6T3B	HARNES 3038266	FAULTY ENG. EGT/TIT		1/9/98 AU980024
(AUS) NO2 ENGINE ITT (T5) HARNES INTERMITTENT FAULT.									
6210		HUGHES 369E	ALLSN 250C20B			BLADE 369021100516A	DEBONDED M/R BLADE		1/8/98 AU980002
(AUS) MAIN ROTOR BLADE DOUBLER DEBONDED IN AREA OF BLADE ROOT LOWER SURFACE. DEPTH OF DEBOND 55MM (2.165IN).									
2910		SKRSKY S76A	TMECA ARRIEL1S			HOSE SS48CT3A132000	HOLED MAIN HYD		12/16/97 AU971647
(AUS) NO2 HYDRAULIC SYSTEM PRESSURE HOSE TO RETRACTION ACTUATOR CONTAINED A SMALL PIN HOLE LEAK.									
7261		SKRSKY S76A	TMECA ARRIEL1S		TMECA ARRIEL1S	OIL SYSTEM 3527	FLUCTUATES ENGINE OIL		10/22/97 AU971635
(AUS) LH ENGINE VENTED OIL OVERBOARD. OIL PRESSURE FLUCTUATING.									
7322		SNIAS AS332L	TMECA MAKILA1A			FCU 0164168190	FAULTY NR 2 ENG FC		12/9/97 534 AU971654
(AUS) NO2 ENGINE FUEL CONTROL UNIT FAULTY.									
(End of INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - HELICOPTERS)									

INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - ENGINES**2/8/98 - 2/14/98 ISSUE: 98-07 ZAC-327**

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
8530		CESSNA 210L	CONT IO520L	MCAULY E2A34C73	CONT IO520L	CYLINDER 570008	CRACKED ENG NR 1 CYL	1382	12/30/97 AU971628
(AUS) NO1 CYLINDER HEAD CRACKED.									
8500		CESSNA 402C	CONT TSIO520VB	MCAULY 3AF32C87		ENGINE	MALFUNCTION RT ENGINE		9/22/97 AU971637
(AUS) RH ENGINE RUNNING ROUGH IN CRUISE. GROUND RUN COULD FIND NO FAULT.									
8520		CESSNA 404CESSNA	CONT GTSIO520M	MCAULY 3FF32C501	CONT GTSIO520M	CRANKCASE 276439R	CRACKED ENGINE		12/12/97 AU971638
(AUS) CRANKCASE CRACKED. FOUND DURING INSPECTION IAW TCM CSB 97-9.									
8520		DHAVXX DH82AROBRTSN	DHAVXX GIPSYMAJOR1			CRANKSHAFT 447	CRACKED ENGINE		12/29/97 AU971632
(AUS) ENGINE CRANKSHAFT CRACKED. FOUND DURING ULTRASONIC INSPECTION IAW AD/DHE/18A4.									
7532		EMB EMB110P1	PWA PT6A34	HARTZL HCB3TN3	PWA PT6A346	BLEED VALVE 310082903	MALFUNCTION LT ENG BLEED	2643	1/7/98 AU980006
(AUS) LH ENGINE BLEED VALVE DIRTY CAUSING THE BLEED VALVE TO STICK WHEN CLOSING RESULTING IN COMPRESSOR STALLS. AIRCRAFT OPERATES FROM UNSEALED AIRSTRIPS.									
7261		SKRSKY S76A	TMECA ARRIEL1S		TMECA ARRIEL1S	OIL SYSTEM 3527	FLUCTUATES ENGINE OIL		10/22/97 AU971635
(AUS) LH ENGINE VENTED OIL OVERBOARD. OIL PRESSURE FLUCTUATING.									
(End of INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - ENGINES)									

ATA OPER	REG. NO SERIAL NO	ACFT MAKE ACFT MODEL	ENG MAKE ENG MDL	PROP MAKE PROP MDL	COMP MFG COMP MDL	PART NAME PART NUMBER	PART COND PART LOC.	TT TSO	DIFF. DATE OPER CONT NO
3455		BEECH G35	CONT E2258	BEECH 215107	BEECH G35	ANTENNA	BROKEN ADF SYSTEM		1/13/98 AU980014
(AUS) ADF SENSOR ANTENNA BROKEN.									
2562		CESSNA 207	CONT IO520F	MCAULY D3A34C404	E01	BATTERY MN1300	CORRODED EMERG LOCATOR		12/15/97 AU971590
(AUS) ELT BATTERIES CORRODED AND LEAKING.									

(End of INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - COMPONENTS)

INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - PROPELLERS

2/8/98 - 2/14/98 ISSUE: 98-07 ZAC-327

ATA	REG. NO	ACFT MAKE	ENG MAKE	PROP MAKE	COMP MFG	PART NAME	PART COND	TT	DIFF. DATE
OPER	SERIAL NO	ACFT MODEL	ENG MDL	PROP MDL	COMP MDL	PART NUMBER	PART LOC.	TSO	OPER CONT NO

(There was no data for this report.)

(End of INTERNATIONAL SERVICE DIFFICULTY REPORT SUMMARY - PROPELLERS)



U.S. Department
of Transportation
**Federal Aviation
Administration**

SERVICE DIFFICULTY REPORT SUMMARY

GENERAL AVIATION - INDEX



The following information provides a tally of the Service Difficulty Reports (SDR's) contained in this weeks issue of the General Aviation SDR Summary. The totals represent only a summation of the SDR's that were submitted to the FAA, Aviation Data Systems Branch, AFS-620, and processed in time for inclusion in the Summary. The first table is a tally of the number of SDR's submitted through the indicated Flight Standards District Office (FSDO). The second table sorts the SDR's by the aircraft or equipment make and model. The heading at the top of each table provides a two digit Joint Aircraft System/Component (JASC) code grouping (e.g., JASC codes 1100 thru 1800 are represented by the heading labeled 11-18) which categorizes in general, the problem areas for each reported discrepancy.

The Flight Standards Service Difficulty Program objective is to achieve prompt and appropriate correction of conditions adversely affecting continued airworthiness of aeronautical products. This is accomplished by the collection of Service Difficulty and Malfunction or Defect Reports. SDR's are consolidation and collation into common data base where they are analyzed for trends, problems, and alert information. This information is then disseminated to the appropriate segments of the aviation community and to other FAA offices.

The number of SDR's submitted is not an indicator of the mechanical reliability or fitness of an air carrier's aircraft fleet and should not be used as such. The air carriers certificate holding office has the primary responsibility for planning, programming evaluations, and assessing the performance of operators. Questions regarding an air carrier's fleet performance should be directed to the appropriate Flight Standards District Office, Certificate Management Office, or Certificate Management Unit.

GENERAL AVIATION SUMMARY INDEX BY DISTRICT OFFICE**2/8/98 To 2/14/98 ISSUE: 98-07 ZAC-327**

DISTRICT OFFICE		SDR TOTALS BY FAA ATA SYSTEM CHAPTER								TOTAL
		11-18	21-29	30-38	45-49	51-57	61-67	71-79	80-85	
AU	S	0	8	6	0	12	1	9	4	40
CA		0	0	2	0	0	1	3	0	6
CE	07	0	0	0	0	1	0	0	0	1
EA	05	0	1	0	0	0	0	0	0	1
EA	09	0	3	1	0	3	0	0	0	7
EA	13	0	0	0	0	0	0	3	0	3
EA	21	0	1	0	0	0	0	0	0	1
GL	03	0	0	0	0	0	1	0	0	1
GL	07	0	0	0	0	0	3	0	0	3
GL	09	0	0	0	0	0	0	1	0	1
GL	11	0	0	1	0	0	0	1	0	2
GL	13	0	0	0	0	0	0	1	0	1
GL	15	0	0	0	0	3	1	0	0	4
GL	17	0	1	0	0	0	0	0	0	1
GL	23	0	0	0	0	1	1	0	1	3
GL	25	0	0	0	0	0	1	0	0	1
NE	01	0	1	0	0	0	0	0	0	1
NM	01	0	1	0	0	0	0	1	0	2
NM	03	0	0	0	0	5	0	0	0	5
NM	04	0	1	0	0	0	0	0	0	1
NM	07	0	0	0	0	0	2	0	0	2
NM	09	0	2	0	0	0	0	0	1	3
NM	11	0	3	2	0	2	15	7	0	29
NM	13	0	0	0	0	1	0	0	0	1
SO	15	0	0	0	0	1	0	0	0	1
SO	17	0	0	0	0	1	0	0	0	1

DISTRICT OFFICE		11-18	21-29	SDR TOTALS BY FAA ATA SYSTEM CHAPTER						
				30-38	45-49	51-57	61-67	71-79	80-85	TOTAL
SO	33	0	0	0	0	3	0	0	0	3
SW	01	0	0	2	0	0	0	0	0	2
SW	03	0	4	13	0	0	12	16	0	45
SW	05	0	1	0	0	0	2	28	0	31
SW	09	0	0	0	0	0	0	1	0	1
SW	11	0	1	0	0	0	0	1	1	3
SW	15	0	0	1	0	1	1	0	0	3
SW	17	0	0	0	0	1	1	0	0	2
SW	19	0	0	0	0	0	2	0	2	4
SW	99	0	0	2	0	3	0	0	0	5
WP	01	0	0	0	0	3	1	0	0	4
WP	07	0	1	1	0	0	0	0	1	3
WP	13	0	0	0	0	0	1	0	0	1
WP	23	0	0	1	0	0	0	0	0	1
WP	25	0	0	1	0	0	0	0	0	1
TOTALS		0	29	33	0	41	46	72	10	231

(End of GENERAL AVIATION SUMMARY INDEX by DISTRICT OFFICE Report)

GENERAL AVIATION SUMMARY INDEX by MANUFACTURER MAKE and MODEL**2/8/98 To 2/14/98 ISSUE: 98-07 ZAC-327**

AIRCRAFT MAKE	AIRCRAFT MODEL	SDR TOTALS BY FAA ATA SYSTEM CHAPTER								TOTAL
		11-18	21-29	30-38	45-49	51-57	61-67	71-79	80-85	
AMTR	MINI500	0	0	0	0	1	1	0	1	3
BEECH	200BEECH	0	0	0	0	8	0	3	0	11
BEECH	58	0	0	0	0	0	1	0	0	1
BEECH	99A	0	0	0	0	0	0	1	0	1
BEECH	A200	0	0	0	0	3	0	0	0	3
BEECH	A24R	0	0	0	0	0	3	0	0	3
BEECH	A36	0	1	0	0	0	0	1	0	2
BEECH	B35	0	0	0	0	0	1	0	0	1
BEECH	B95	0	0	0	0	0	0	1	0	1
BEECH	C24R	0	0	1	0	0	0	0	0	1
BEECH	D55	0	0	0	0	2	0	0	0	2
BEECH	E55	0	0	0	0	0	0	0	1	1
BEECH	G35	0	2	4	0	0	0	0	0	6
BEECH	S35	0	0	0	0	0	1	0	0	1
BELL	206B3	0	0	1	0	0	0	0	0	1
BELL	206B3	0	0	0	0	0	0	1	0	1
BELL	206BELL	0	0	0	0	0	1	0	0	1
BELL	206L	0	0	0	0	0	1	0	0	1
BELL	206L1	0	0	1	0	0	0	2	0	3
BELL	206L3	0	0	2	0	0	0	1	0	3
BELL	212	0	0	1	0	0	0	0	0	1
BELL	212	0	0	0	0	0	0	1	0	1
BELL	222U	0	0	0	0	0	0	3	0	3
BELL	222U	0	0	0	0	0	2	0	0	2
BELL	230	0	0	0	0	0	0	1	0	1
BELL	407	0	0	2	0	0	1	5	0	8
BELL	407	0	0	0	0	0	1	0	0	1

AIRCRAFT MAKE	AIRCRAFT MODEL	SDR TOTALS BY FAA ATA SYSTEM CHAPTER								TOTAL
		11-18	21-29	30-38	45-49	51-57	61-67	71-79	80-85	
BELL	412	0	2	0	0	0	4	2	0	8
BOLKMS	BK117A1	0	0	0	0	0	0	1	0	1
BOLKMS	BK117A3	0	0	2	0	0	0	11	0	13
BOLKMS	BK117A4	0	0	0	0	0	0	14	0	14
BOLKMS	BK117B1	0	3	1	0	0	2	3	0	9
BOLKMS	BK117B2	0	0	1	0	0	0	2	0	3
BOLKMS	BK117C1	0	1	0	0	0	0	0	0	1
BOLKMS	BO105LSA3	0	0	0	0	0	0	1	0	1
BOLKMS	BO105S	0	0	0	0	0	2	3	0	5
CESSNA	150J	0	0	0	0	1	0	0	0	1
CESSNA	150M	0	0	0	0	0	0	1	0	1
CESSNA	172M	0	1	0	0	0	0	0	0	1
CESSNA	172R	0	1	0	0	1	0	0	0	2
CESSNA	172RG	0	0	1	0	0	0	0	0	1
CESSNA	175A	0	0	0	0	0	0	1	0	1
CESSNA	182F	0	1	0	0	0	0	0	0	1
CESSNA	182P	0	0	1	0	1	0	0	0	2
CESSNA	207	0	1	0	0	0	0	0	0	1
CESSNA	208B	0	0	0	0	1	0	0	0	1
CESSNA	210	0	0	0	0	1	0	0	0	1
CESSNA	210L	0	0	0	0	0	0	0	1	1
CESSNA	310Q	0	0	1	0	0	0	0	0	1
CESSNA	310R	0	2	1	0	0	0	0	0	3
CESSNA	340A	0	1	0	0	0	0	0	0	1
CESSNA	402A	0	0	0	0	1	0	0	0	1
CESSNA	402B	0	1	0	0	1	0	1	0	3
CESSNA	402C	0	0	0	0	0	0	0	1	1

AIRCRAFT MAKE	AIRCRAFT MODEL	SDR TOTALS BY FAA ATA SYSTEM CHAPTER								TOTAL
		11-18	21-29	30-38	45-49	51-57	61-67	71-79	80-85	
CESSNA	402CESSNA	0	0	0	0	1	0	0	0	1
CESSNA	404CESSNA	0	0	0	0	2	0	0	1	3
CESSNA	414A	0	0	0	0	0	2	0	1	3
CESSNA	421B	0	0	1	0	0	0	0	0	1
CESSNA	421C	0	1	0	0	0	0	0	1	2
CESSNA	441	0	1	0	0	0	0	0	0	1
CESSNA	500CESSNA	0	0	0	0	1	0	0	0	1
CESSNA	550	0	1	0	0	0	0	0	0	1
CESSNA	P210N	0	0	1	0	0	0	0	0	1
CESSNA	R182	0	0	0	0	0	0	1	0	1
CESSNA	R182	0	2	0	0	0	0	0	0	2
CESSNA	T210L	0	0	1	0	0	0	0	0	1
DHAVXX	DH82AROBRTSN	0	0	0	0	0	0	0	1	1
DOUG	MD900	0	0	1	0	2	13	2	0	18
EMB	EMB110P1	0	0	0	0	0	0	1	0	1
GULSTM	500B	0	1	0	0	0	0	0	1	2
HUGHES	369D	0	0	0	0	0	0	2	0	2
HUGHES	369E	0	0	0	0	0	1	0	0	1
MAULE	M7235	0	0	0	0	0	0	1	0	1
MTSBSI	MU2B30	0	0	0	0	1	0	0	0	1
MTSBSI	MU2B60	0	0	0	0	1	0	0	0	1
PARTEN	P68B	0	0	0	0	1	0	0	0	1
PIPER	PA28151	0	0	0	0	0	1	0	0	1
PIPER	PA28235	0	0	0	0	1	0	0	0	1
PIPER	PA31	0	0	0	0	0	1	0	0	1
PIPER	PA31310	0	3	1	0	3	0	0	0	7
PIPER	PA31350	0	0	0	0	1	0	1	0	2

AIRCRAFT MAKE	AIRCRAFT MODEL	SDR TOTALS BY FAA ATA SYSTEM CHAPTER								TOTAL
		11-18	21-29	30-38	45-49	51-57	61-67	71-79	80-85	
PIPER	PA31P	0	0	0	0	0	0	0	1	1
PIPER	PA32R300	0	0	1	0	3	0	0	0	4
PIPER	PA32R301	0	0	0	0	1	0	1	0	2
PIPER	PA34200	0	1	1	0	0	0	0	0	2
PIPER	PA38112	0	0	0	0	1	0	0	0	1
PIPER	PA44180	0	0	0	0	0	0	1	0	1
PIPER	PA46350P	0	0	1	0	0	0	0	0	1
PIPER	PA60602P	0	0	1	0	0	0	0	0	1
SKRSKY	S76A	0	1	2	0	0	4	0	0	7
SKRSKY	S76A	0	1	0	0	0	0	1	0	2
SNIAS	AS332L	0	0	0	0	0	0	1	0	1
SNIAS	AS350B2	0	0	0	0	0	2	0	0	2
SOCATA	TB10TOBAGO	0	0	0	0	1	0	0	0	1
SOCATA	TBM700	0	0	0	0	0	1	0	0	1
ZLIN	Z242L	0	0	2	0	0	0	0	0	2
TOTALS		0	29	33	0	41	46	72	10	231

(End of AIR CARRIER SUMMARY INDEX by OPERATOR Report)

JOINT AIRCRAFT SYSTEM/COMPONENT CODE TABLE

PREFACE

The Joint Aircraft System/Component (JASC) Code Table is a modified version of the Air Transport Association of America (ATA), Specification 100 code. It was developed by the Federal Aviation Administration's (FAA), Aviation Data Systems Branch (AFS-620). Technical support was provided by the Galaxy Scientific Corporation, and various representatives of the air carrier and general aviation community.

Over the past four years, the JASC format of the ATA Spec 100 code has gained widespread industry acceptance. In a harmonized effort, the FAA's counterparts in Australia and Canada have adopted the JASC code with only a few exceptions. Some Canadian aircraft manufacturers have also recently adopted this new standard.

This code table is constructed by using the new JASC four (4) digit code, along with an abbreviated code title. The abbreviated titles have been modified in some cases to clarify the intended use of the accompanying code. This table can be used as a quick reference chart, to assist in the coding and review of aircraft structures or systems data (i.e., Service Difficulty Report (SDR), Accident/Incident Report).

The current coding scheme used in the JASC code was introduced in May 1991, for the technical classification of SDR's. Its predecessor, the FAA aircraft system/component code, was a similar but more complex eight-digit code which was developed over 25 years ago. It was constructed around the computer technology of that period. It consisted of a four digit numerical code plus a four alpha character code to make data retrieval possible. Since that time, computer technology has advanced many fold. Reducing the code from eight to four characters simplifies coding, and in some cases, makes JASC coding match the ATA Specification 100 first three digits, which are used to identify aircraft systems. The ATA code does not reference the fourth digit, so it is free to be used for identifying components.

The JASC code aircraft structural section has increased due to problems inherent with aging aircraft. As an example, FAA code 5301 SXBD was expanded to 20 items due to the high rate of reporting in this area (8021 structural reports were received in 1989). In some instances, there was very little reporting and codes were combined into other systems if the safety impact was not significant. The overall reduction in codes has been from 568 FAA codes to 488 JASC codes, with the significant increase being in the structural area as stated earlier.

The JASC code divides the engine section into two major code groups to separate the turbine and reciprocating engines. The codes for the turbine engines are in JASC Chapter 72, Turbine/Turboprop Engine. The codes for the reciprocating engines are now exclusively found in JASC Chapter 85, Reciprocating Engine.

The other major deviation from ATA Spec 100 is in ATA section 2730, specifically involves the stall warning system. Early technology (primarily on smaller aircraft) directly linked the sensing of flight attitude to one of the components which furnished the means of manually controlling the flight attitude characteristics (elevator). Today, most large transport category aircraft utilize electronic units to sense the change in the environmental condition called stall, and use the data to influence navigation. ATA section 3410, Flight Environment Data, includes high speed warning in its code definition. Stall warning (low speed) is the reciprocal term of high speed warning, so its filing under the same code appears more logical. Thus, with the JASC code it was decided to move the stall warning system to Chapter 34 under the separate code JASC code 3418, Stall Warning System.

The FAA is continuing to pursue worldwide involvement from operators and manufacturers in addressing the need for international standardization of aircraft system/component codes. The ultimate goal is to develop a universal aircraft/component numbering standard which can be used in the manufacturer's maintenance manual, wiring diagram manual, system manuals and illustrated parts catalog. This harmonized standard must be a usable standard for the aircraft manufacturers, air carrier operators and the general aviation community.

We welcome comments and feedback regarding the possible forming of working groups to achieve this long range consideration of possibly harmonizing the ATA Specification 100 code and the JASC code. Comments may be directed to the FAA, Aviation Data System Branch, AFS-620, P.O. Box 25082, Oklahoma City, OK 73125.

JOINT AIRCRAFT SYSTEM/COMPONENT CODE TABLE

JASC/ TITLE

11 PLACARDS AND MARKINGS

1100 PLACARDS AND MARKINGS

12 SERVICING

1210 FUEL SERVICING
1220 OIL SERVICING
1230 HYDRAULIC FLUID SERVICING
1240 COOLANT SERVICING

18 HELICOPTER VIBRATION

1800 HELICOPTER VIB/NOISE ANALYSIS
1810 HELICOPTER VIBRATION ANALYSIS
1820 HELICOPTER NOISE ANALYSIS

21 AIR CONDITIONING

2100 AIR CONDITIONING SYSTEM
2110 CABIN COMPRESSOR SYSTEM
2120 AIR DISTRIBUTION SYSTEM
2121 AIR DISTRIBUTION FAN
2130 CABIN PRESSURE CONTROL SYSTEM
2131 CABIN PRESSURE CONTROLLER
2132 CABIN PRESSURE INDICATOR
2133 PRESSURE REGUL/OUTFLOW VALVE
2134 CABIN PRESSURE SENSOR
2140 HEATING SYSTEM
2150 CABIN COOLING SYSTEM
2160 CABIN TEMPERATURE CONTROL SYSTEM
2161 CABIN TEMPERATURE CONTROLLER
2162 CABIN TEMPERATURE INDICATOR
2163 CABIN TEMPERATURE SENSOR
2170 HUMIDITY CONTROL SYSTEM

22 AUTO FLIGHT

2200 AUTO FLIGHT SYSTEM
2210 AUTOPILOT SYSTEM
2211 AUTOPILOT COMPUTER
2212 ALTITUDE CONTROLLER
2213 FLIGHT CONTROLLER
2214 AUTOPILOT TRIM INDICATOR
2215 AUTOPILOT MAIN SERVO
2216 AUTOPILOT TRIM SERVO
2220 SPEED-ATTITUDE CORRECT. SYSTEM
2230 AUTO THROTTLE SYSTEM
2250 AERODYNAMIC LOAD ALLEVIATING

23 COMMUNICATIONS

2300 COMMUNICATIONS SYSTEM
2310 HF COMMUNICATION SYSTEM
2311 UHF COMMUNICATION SYSTEM
2312 VHF COMMUNICATION SYSTEM
2320 DATA TRANSMISSION AUTO CALL
2330 ENTERTAINMENT SYSTEM
2340 INTERPHONE & PA SYSTEM
2350 AUDIO INTEGRATING SYSTEM
2360 STATIC DISCHARGE SYSTEM
2370 AUDIO/VIDEO MONITORING

24 ELECTRICAL POWER

2400 ELECTRICAL POWER SYSTEM
2410 ALTERNATOR-GENERATOR DRIVE
2420 AC GENERATION SYSTEM
2421 AC GENERATOR-ALTERNATOR
2422 AC INVERTER
2423 PHASE ADAPTER

24 ELECTRICAL POWER CONT'D

2424 AC REGULATOR
2425 AC INDICATING SYSTEM
2430 DC GENERATING SYSTEM
2431 BATTERY OVERHEAT WARN. SYSTEM
2432 BATTERY/CHARGER SYSTEM
2433 DC RECTIFIER-CONVERTER
2434 DC GENERATOR-ALTERNATOR
2435 STARTER-GENERATOR
2436 DC REGULATOR
2437 DC INDICATING SYSTEM
2440 EXTERNAL POWER SYSTEM
2450 AC POWER DISTRIBUTION SYSTEM
2460 DC POWER/DISTRIBUTION SYSTEM

25 EQUIPMENT/FURNISHINGS

2500 CABIN EQUIPMENT/FURNISHINGS
2510 FLIGHT COMPARTMENT EQUIPMENT
2520 PASSENGER COMPARTMENT EQUIPMENT
2530 BUFFET/GALLEYS
2540 LAVATORIES
2550 CARGO COMPARTMENTS
2551 AGRICULTURAL SPRAY SYSTEM
2560 EMERGENCY EQUIPMENT
2561 LIFE JACKET
2562 EMERGENCY LOCATOR BEACON
2563 PARACHUTE
2564 LIFE RAFT
2565 ESCAPE SLIDE
2570 ACCESSORY COMPARTMENT
2571 BATTERY BOX STRUCTURE
2572 ELECTRONIC SHELF SECTION

26 FIRE PROTECTION

2600 FIRE PROTECTION SYSTEM
2610 DETECTION SYSTEM
2611 SMOKE DETECTION
2612 FIRE DETECTION
2613 OVERHEAT DETECTION
2620 EXTINGUISHING SYSTEM
2621 FIRE BOTTLE, FIXED
2622 FIRE BOTTLE, PORTABLE

27 FLIGHT CONTROLS

2700 FLIGHT CONTROL SYSTEM
2701 CONTROL COLUMN SECTION
2710 AILERON CONTROL SYSTEM
2711 AILERON TAB CONTROL SYSTEM
2720 RUDDER CONTROL SYSTEM
2721 RUDDER TAB CONTROL SYSTEM
2722 RUDDER ACTUATOR
2730 ELEVATOR CONTROL SYSTEM
2731 ELEVATOR TAB CONTROL SYSTEM
2740 STABILIZER CONTROL SYSTEM
2741 STABILIZER POSITION INDICATING
2742 STABILIZER ACTUATOR
2750 TE FLAP CONTROL SYSTEM
2751 TE FLAP POSITION IND. SYSTEM
2752 TE FLAP ACTUATOR
2760 DRAG CONTROL SYSTEM
2761 DRAG CONTROL ACTUATOR
2770 GUST LOCK/DAMPER SYSTEM
2780 LE FLAP CONTROL SYSTEM
2781 LE FLAP POSITION IND. SYSTEM
2782 LE FLAP ACTUATOR

28 FUEL

2800 AIRCRAFT FUEL SYSTEM
2810 FUEL STORAGE
2820 ACFT FUEL DISTRIB. SYSTEM
2821 ACFT FUEL FILTER/STRAINER
2822 FUEL BOOST PUMP
2823 FUEL SELECTOR/SHUTOFF VALVE
2824 FUEL TRANSFER VALVE
2830 FUEL DUMP SYSTEM
2840 ACFT FUEL INDICATING
2841 FUEL QUANTITY INDICATOR
2842 FUEL QUANTITY SENSOR
2843 FUEL TEMPERATURE INDICATING
2844 FUEL PRESSURE INDICATOR

29 HYDRAULIC POWER

2900 HYDRAULIC POWER SYSTEM
2910 HYDRAULIC, MAIN SYSTEM
2911 HYDRAULIC POWER-ACCUMULATOR-MAIN
2912 HYDRAULIC FILTER-MAIN SYSTEM
2913 HYDRAULIC PUMP. ELECT-ENG.-MAIN
2914 HYDRAULIC HANDPUMP-MAIN
2915 HYDRAULIC PRESSURE RELIEF VLV-MAIN
2916 HYDRAULIC RESERVOIR-MAIN
2917 HYDRAULIC PRESSURE REGULATOR-MAIN
2920 HYDRAULIC, AUXILIARY SYSTEM
2921 HYDRAULIC ACCUMULATOR-AUXILIARY
2922 HYDRAULIC FILTER-AUXILIARY
2923 HYDRAULIC PUMP-AUXILIARY
2925 HYDRAULIC PRESSURE RELIEF-AUXILIARY
2926 HYDRAULIC RESERVOIR-AUXILIARY
2927 HYDRAULIC PRESSURE REGULATOR-AUX.
2930 HYDRAULIC SYSTEM INDICATING
2931 HYDRAULIC PRESSURE INDICATOR
2932 HYDRAULIC PRESSURE SENSOR
2933 HYDRAULIC QUANTITY INDICATOR
2934 HYDRAULIC QUANTITY SENSOR

30 ICE AND RAIN PROTECTION

3000 ICE/RAIN PROTECTION SYSTEM
3010 AIRFOIL ANTI/DE-ICE SYSTEM
3020 AIR INTAKE ANTI/DE-ICE SYSTEM
3030 PITOT/STATIC ANTI-ICE SYSTEM
3040 WINDSHIELD/DOOR RAIN/ICE REMOVAL
3050 ANTENNA/RADOME ANTI-ICE/DE-ICE SYSTEM
3060 PROP/ROTOR ANTI-ICE/DE-ICE SYSTEM
3070 WATER LINE ANTI-ICE SYSTEM
3080 ICE DETECTION

31 INSTRUMENTS

3100 INDICATING/RECORDING SYSTEM
3110 INSTRUMENT PANEL
3120 INDEPENDENT INSTRUMENTS (CLOCK, ETC.)
3130 DATA RECORDERS (FLT/MAINT)
3140 CENTRAL COMPUTERS (EICAS)
3150 CENTRAL WARNING
3160 CENTRAL DISPLAY
3170 AUTOMATIC DATA

32 LANDING GEAR

3200 LANDING GEAR SYSTEM
3201 LANDING GEAR/WHEEL FAIRING
3210 MAIN LANDING GEAR
3211 MAIN LANDING GEAR ATTACH SECTION
3212 EMERGENCY FLOTATION SECTION
3213 MAIN LANDING GEAR STRUT/AXLE/TRUCK
3220 NOSE/TAIL LANDING GEAR
3221 NOSE/TAIL LANDING GEAR ATTACH SECTION
3222 NOSE/TAIL LANDING GEAR STRUT/AXLE
3230 LANDING GEAR RETRACT/EXT. SYSTEM
3231 LANDING GEAR DOOR RETRACT SECTION
3232 LANDING GEAR DOOR ACTUATOR
3233 LANDING GEAR ACTUATOR
3234 LANDING GEAR SELECTOR
3240 LANDING GEAR BRAKE SYSTEM
3241 BRAKE ANTI-SKID SECTION
3242 BRAKE
3243 MASTER CYL/BRAKE VALVE
3244 TIRE
3245 TIRE TUBE
3246 WHEEL/SKI/FLOAT
3250 LANDING GEAR STEERING SYSTEM
3251 STEERING UNIT
3252 SHIMMY DAMPER
3260 LANDING GEAR POSITION & WARNING
3270 AUXILIARY GEAR (TAIL SKID)

33 LIGHTS

3300 LIGHTING SYSTEM
3310 FLIGHT COMPARTMENT LIGHTING
3320 PASSENGER COMPARTMENT LIGHTING
3330 CARGO COMPARTMENT LIGHTING
3340 EXTERIOR LIGHTING
3350 EMERGENCY LIGHTING

34 NAVIGATION

3400 NAVIGATION SYSTEM
3410 FLIGHT ENVIRONMENT DATA
3411 PITOT/STATIC SYSTEM
3412 OUTSIDE AIR TEMP. IND./SENSOR
3413 RATE OF CLIMB INDICATOR
3414 AIRSPEED/MACH INDICATING
3415 HIGH SPEED WARNING
3416 ALTIMETER, BAROMETRIC/ENCODER

34 NAVIGATION CONT'D

3417 AIR DATA COMPUTER
3418 STALL WARNING SYSTEM
3420 ATTITUDE AND DIRECTION DATA SYSTEM
3421 ATTITUDE GYRO & IND. SYSTEM
3422 DIRECTIONAL GYRO & IND. SYSTEM
3423 MAGNETIC COMPASS
3424 TURN & BANK/RATE OF TURN INDICATOR
3425 INTEGRATED FLT. DIRECTOR SYSTEM
3430 LANDING & TAXI AIDS
3431 LOCALIZER/VOR SYSTEM
3432 GLIDE SLOPE SYSTEM
3433 MICROWAVE LANDING SYSTEM
3434 MARKER BEACON SYSTEM
3435 HEADS UP DISPLAY SYSTEM
3436 WIND SHEAR DETECTION SYSTEM
3440 INDEPENDENT POS. DETERMINING SYSTEM
3441 INERTIAL GUIDANCE SYSTEM
3442 WEATHER RADAR SYSTEM
3443 DOPPLER SYSTEM
3444 GROUND PROXIMITY SYSTEM
3445 AIR COLLISION AVOIDANCE SYSTEM (TCAS)
3446 NON RADAR WEATHER SYSTEM
3450 DEPENDENT POSITION DETERMINING SYSTEM
3451 DME/TACAN SYSTEM
3452 ATC TRANSPONDER SYSTEM
3453 LORAN SYSTEM
3454 VOR SYSTEM
3455 ADF SYSTEM
3456 OMEGA NAVIGATION SYSTEM
3457 GLOBAL POSITIONING SYSTEM
3460 FLIGHT MANAGE. COMPUTING SYSTEM

35 OXYGEN

3500 OXYGEN SYSTEM
3510 CREW OXYGEN SYSTEM
3520 PASSENGER OXYGEN SYSTEM
3530 PORTABLE OXYGEN SYSTEM

36 PNEUMATIC

3600 PNEUMATIC SYSTEM
3610 PNEUMATIC DISTRIBUTION SYSTEM
3620 PNEUMATIC INDICATING SYSTEM

37 VACUUM

3700 VACUUM SYSTEM
3710 VACUUM DISTRIBUTION SYSTEM
3720 VACUUM INDICATING SYSTEM

38 WATER/WASTE

3800 WATER & WASTE SYSTEM
3810 POTABLE WATER SYSTEM
3820 WASH WATER SYSTEM
3830 WASTE DISPOSAL SYSTEM
3840 AIR SUPPLY (WATER PRESS. SYSTEM)

45 CENTRAL MAINT. SYSTEM

4500 CENTRAL MAINT. COMPUTER

49 AIRBORNE AUXILIARY POWER

4900 AIRBORNE APU SYSTEM
4910 APU COWLING/CONTAINMENT
4920 APU CORE ENGINE
4930 APU ENGINE FUEL & CONTROL
4940 APU START/IGNITION SYSTEM
4950 APU BLEED AIR SYSTEM
4960 APU CONTROLS
4970 APU INDICATING SYSTEM
4980 APU EXHAUST SYSTEM
4990 APU OIL SYSTEM

51 STANDARD PRACTICES/STRUCTURES

5100 STANDARD PRACTICES/STRUCTURES
5101 AIRCRAFT STRUCTURES
5102 BALLOON REPORTS

52 DOORS

5200 DOORS
5210 PASSENGER/CREW DOORS
5220 EMERGENCY EXIT
5230 CARGO/BAGGAGE DOORS
5240 SERVICE DOORS
5241 GALLEY DOORS
5242 E/E COMPARTMENT DOORS
5243 HYDRAULIC COMPARTMENT DOORS
5244 ACCESSORY COMPARTMENT DOORS
5245 AIR CONDITIONING COMPART. DOORS
5246 FLUID SERVICE DOORS

5247 APU DOORS
5248 TAIL CONE DOORS
5250 FIXED INNER DOORS
5260 ENTRANCE STAIRS
5270 DOOR WARNING SYSTEM
5280 LANDING GEAR DOORS

53 FUSELAGE

5300 FUSELAGE STRUCTURE (GENERAL)
5301 AERIAL TOW EQUIPMENT
5302 ROTORCRAFT TAIL BOOM
5310 FUSELAGE MAIN STRUCTURE
5311 FUSELAGE MAIN FRAME
5312 FUSELAGE MAIN BULKHEAD
5313 FUSELAGE MAIN LONGERON/STRINGER
5314 FUSELAGE MAIN KEEL
5315 FUSELAGE MAIN FLOOR BEAM
5320 FUSELAGE MISCELLANEOUS STRUCTURE
5321 FUSELAGE FLOOR PANEL
5322 FUSELAGE INTERNAL MOUNT STRUCTURE
5323 FUSELAGE INTERNAL STAIRS
5324 FUSELAGE FIXED PARTITIONS
5330 FUSELAGE MAIN PLATE/SKIN
5340 FUSELAGE MAIN ATTACH FITTINGS
5341 WING ATTACH FITTINGS (ON FUSELAGE)
5342 STABILIZER ATTACH FITTINGS
5343 LANDING GEAR ATTACH FITTINGS
5344 FUSELAGE DOOR HINGES
5345 FUSELAGE EQUIPMENT ATTACH FITTINGS
5346 POWERPLANT ATTACH FITTINGS
5347 SEAT/CARGO ATTACH FITTINGS
5350 FUSELAGE AERODYNAMIC FAIRINGS

54 NACELLES/PYLONS

5400 NACELLE/PYLON STRUCTURE
5410 MAIN FRAME (ON NACELLE/PYLON)
5411 FRAME/SPAR/RIB(NACELLE/PYLON)
5412 BULKHEAD/FIREWALL (NAC/PYLON)
5413 LONGERON/STRINGER (NAC/PYLON)
5414 PLATE SKIN (NAC/PYLONS)
5415 ATTACH FITTINGS (NAC/PYLON)

55 STABILIZERS

5500 EMPENNAGE STRUCTURE
5510 HORIZONTAL STABILIZER STRUCTURE
5511 HORIZONTAL STABILIZER SPAR/RIB
5512 HORIZONTAL STABILIZER PLATE/SKIN
5513 HORIZONTAL STABILIZER TAB STRUCTURE
5520 ELEVATOR STRUCTURE

55 STABILIZERS CONT'D

5521 ELEVATOR SPAR/RIB STRUCTURE
5522 ELEVATOR PLATES/SKIN STRUCTURE
5523 ELEVATOR TAB STRUCTURE
5530 VERTICAL STABILIZER STRUCTURE
5531 VERTICAL STABILIZER SPAR/RIB STRUCTURE
5532 VERTICAL STABILIZER PLATES/SKIN
5533 VENTRAL STRUCTURE (ON VERT. STAB)
5540 RUDDER STRUCTURE
5541 RUDDER SPAR/RIB STRUCTURE
5542 RUDDER PLATE/SKIN STRUCTURE
5543 RUDDER TAB STRUCTURE
5550 EMPENNAGE FLT. CONT. ATTACH FITTING
5551 HORIZONTAL STABILIZER ATTACH FITTING
5552 ELEVATOR/TAB ATTACH FITTINGS
5553 VERT. STAB. ATTACH FITTINGS
5554 RUDDER/TAB ATTACH FITTINGS

56 WINDOWS

5600 WINDOW/WINDSHIELD SYSTEM
5610 FLIGHT COMPARTMENT WINDOWS
5620 PASSENGER COMPARTMENT WINDOWS
5630 DOOR WINDOWS
5640 INSPECTION WINDOWS

57 WINGS

5700 WING STRUCTURE
5710 WING MAIN FRAME STRUCTURE
5711 WING SPAR STRUCTURE
5712 WING RIB STRUCTURE
5713 WING LONGERON/STRINGER
5714 WING CENTER BOX
5720 WING MISCELLANEOUS STRUCTURE
5730 WING PLATES/SKINS
5740 WING ATTACH FITTINGS
5741 WING, FUSELAGE ATTACH FITTINGS
5742 WING, NAC/PYLON ATTACH FITTINGS
5743 WING, LANDING GEAR ATTACH FITTINGS
5744 CONTROL SURFACE ATTACH FITTINGS
5750 WING CONTROL SURFACE STRUCTURE
5751 AILERON STRUCTURE
5752 AILERON TAB STRUCTURE
5753 TE FLAP STRUCTURE
5754 LEADING EDGE DEVICE STRUCTURE
5755 SPOILER STRUCTURE

61 PROPELLERS/PROPULSORS

6100 PROPELLER SYSTEM
6110 PROPELLER ASSEMBLY
6111 PROPELLER BLADE SECTION
6112 PROPELLER DE-ICE BOOT SECTION
6113 PROPELLER SPINNER SECTION
6114 PROPELLER HUB SECTION
6120 PROPELLER CONTROL SYSTEM
6121 PROPELLER SYNCHRONIZER SECTION
6122 PROPELLER GOVERNOR
6123 PROPELLER FEATHERING/REVERSING
6130 PROPELLER BRAKING
6140 PROPELLER INDICATING SYSTEM

62 MAIN ROTOR

6200 MAIN ROTOR SYSTEM
6210 MAIN ROTOR BLADES
6220 MAIN ROTOR HEAD
6230 MAIN ROTOR MAST/SWASHPLATE
6240 MAIN ROTOR INDICATING SYSTEM

63 MAIN ROTOR DRIVE

6300 MAIN ROTOR DRIVE SYSTEM
6310 ENGINE/TRANSMISSION COUPLING
6320 MAIN ROTOR GEARBOX
6321 MAIN ROTOR BRAKE
6322 ROTORCRAFT COOLING FAN SYSTEM
6330 MAIN ROTOR TRANSMISSION MOUNT
6340 ROTOR DRIVE INDICATING SYSTEM

64 TAIL ROTOR

6400 TAIL ROTOR SYSTEM
6410 TAIL ROTOR BLADE
6420 TAIL ROTOR HEAD
6440 TAIL ROTOR INDICATING SYSTEM

65 TAIL ROTOR DRIVE

6500 TAIL ROTOR DRIVE SYSTEM
6510 TAIL ROTOR DRIVE SHAFT
6520 TAIL ROTOR GEARBOX
6540 TAIL ROTOR DRIVE INDICATING SYSTEM

67 ROTORS FLIGHT CONTROL

6700 ROTORCRAFT FLIGHT CONTROL
6710 MAIN ROTOR CONTROL
6711 TILT ROTOR FLIGHT CONTROL
6720 TAIL ROTOR CONTROL SYSTEM
6730 ROTORCRAFT SERVO SYSTEM

71 POWERPLANT

7100 POWERPLANT SYSTEM
7110 ENGINE COWLING SYSTEM
7111 COWL FLAP SYSTEM
7112 ENGINE AIR BAFFLE SECTION
7120 ENGINE MOUNT SECTION
7130 ENGINE FIRESEALS
7160 ENGINE AIR INTAKE SYSTEM
7170 ENGINE DRAINS

72 TURBINE/TURBOPROP ENGINE

7200 ENGINE (TURBINE/TURBOPROP)
7210 TURBINE ENGINE REDUCTION GEAR
7220 TURBINE ENGINE AIR INLET SECTION
7230 TURBINE ENGINE COMPRESSOR SECTION
7240 TURBINE ENGINE COMBUSTION SECTION
7250 TURBINE SECTION
7260 TURBINE ENGINE ACCESSORY DRIVE
7261 TURBINE ENGINE OIL SYSTEM
7270 TURBINE ENGINE BYPASS SECTION

73 ENGINE FUEL & CONTROL

7300 ENGINE FUEL & CONTROL
7310 ENGINE FUEL DISTRIBUTION
7311 ENGINE FUEL-OIL COOLER
7312 FUEL HEATER
7313 FUEL INJECTOR NOZZLE
7314 ENGINE FUEL PUMP
7320 FUEL CONTROLLING SYSTEM
7321 FUEL CONTROL/ELECTRONIC
7322 FUEL CONTROL/CARBURETOR
7323 TURBINE GOVERNOR
7324 FUEL DIVIDER
7330 ENGINE FUEL INDICATING SYSTEM
7331 FUEL FLOW INDICATING
7332 FUEL PRESSURE INDICATING
7333 FUEL FLOW SENSOR
7334 FUEL PRESSURE SENSOR

74 IGNITION

7400 IGNITION SYSTEM
7410 IGNITION POWER SUPPLY
7411 LOW TENSION COIL
7412 EXCITER
7413 INDUCTION VIBRATOR
7414 MAGNETO/DISTRIBUTOR
7420 IGNITION HARNESS (DISTRIBUTION)
7421 SPARK PLUG/IGNITER
7430 IGNITION SWITCHING

75 AIR

7500 ENGINE BLEED AIR SYSTEM
7510 ENGINE ANTI-ICING SYSTEM
7520 ENGINE COOLING SYSTEM
7530 COMPRESSOR BLEED CONTROL
7531 COMPRESSOR BLEED GOVERNOR
7532 COMPRESSOR BLEED VALVE
7540 BLEED AIR INDICATING SYSTEM

76 ENGINE CONTROLS

7600 ENGINE CONTROLS
7601 ENGINE SYNCHRONIZING
7602 MIXTURE CONTROL
7603 POWER LEVER
7620 ENGINE EMERGENCY SHUTDOWN SYSTEM

77 ENGINE INDICATING

7700 ENGINE INDICATING SYSTEM
7710 POWER INDICATING SYSTEM
7711 ENGINE PRESSURE RATIO (EPR)
7712 ENGINE BMEP/TORQUE INDICATING
7713 MANIFOLD PRESSURE (MP) INDICATING
7714 ENGINE RPM INDICATING SYSTEM
7720 ENGINE TEMP. INDICATING SYSTEM
7721 CYLINDER HEAD TEMP (CHT) INDICATING
7722 ENG. EGT/TIT INDICATING SYSTEM
7730 ENGINE IGNITION ANALYZER SYSTEM
7731 ENGINE IGNITION ANALYZER
7732 ENGINE VIBRATION ANALYZER
7740 ENGINE INTEGRATED INSTRUMENT SYSTEM

78 ENGINE EXHAUST

7800 ENGINE EXHAUST SYSTEM
7810 ENGINE COLLECTOR/TAILOPIPE/NOZZLE
7820 ENGINE NOISE SUPPRESSOR
7830 THRUST REVERSER

79 ENGINE OIL

7900 ENGINE OIL SYSTEM (AIRFRAME)
7910 ENGINE OIL STORAGE (AIRFRAME)
7920 ENGINE OIL DISTRIBUTION (AIRFRAME)
7921 ENGINE OIL COOLER
7922 ENGINE OIL TEMP. REGULATOR
7923 OIL SHUTOFF VALVE
7930 ENGINE OIL INDICATING SYSTEM
7931 ENGINE OIL PRESSURE
7932 ENGINE OIL QUANTITY
7933 ENGINE OIL TEMPERATURE

80 STARTING

8000 ENGINE STARTING SYSTEM
8010 ENGINE CRANKING
8011 ENGINE STARTER
8012 ENGINE START VALVES/CONTROLS

81 TURBOCHARGING

8100 EXHAUST TURBINE SYSTEM (RECIP)
8110 POWER RECOVERY TURBINE (RECIP)
8120 EXHAUST TURBOCHARGER

82 WATER INJECTION

8200 WATER INJECTION SYSTEM

83 ACCESSORY GEARBOXES

8300 ACCESSORY GEARBOXES

85 RECIPROCATING ENGINE

8500 ENGINE (RECIPROCATING)
8510 RECIPROCATING ENGINE FRONT SECTION
8520 RECIPROCATING ENGINE POWER SECTION

8530 RECIPROCATING ENGINE CYLINDER SECTION
8540 RECIPROCATING ENGINE REAR SECTION
8550 RECIPROCATING ENGINE OIL SYSTEM

MECHANICS CREED

UPON MY HONOR I swear that I shall hold in sacred trust the rights and privileges conferred upon me as a certified mechanic. Knowing full well that the safety and lives of others are dependent upon my skill and judgment, I shall never knowingly subject others to risks which I would not be willing to assume for myself, or for those dear to me.

IN DISCHARGING this trust, I pledge myself never to undertake work or approve work which I feel to be beyond the limits of my knowledge; nor shall I allow any non-certificated superior to persuade me to approve aircraft or equipment as airworthy against my better judgment; nor shall I permit my judgment to be influenced by money or other personal gain; nor shall I pass as airworthy aircraft or equipment about which I am in doubt, either as a result of direct inspection or uncertainty regarding the ability of others who have worked on it to accomplish their work satisfactorily.

I REALIZE the grave responsibility which is mine as a certified airman, to exercise my judgment on the airworthiness of aircraft and equipment. I, therefore, pledge unyielding adherence to these precepts for the advancement of aviation and for the dignity of my vocation.